

**THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS**

THE HOLMES GROUP, INC.,

Plaintiff,

vs.

WEST BEND HOUSEWARES, LLC and
FOCUS PRODUCTS GROUP, LLC,

Defendants.

Civil Action No. 05-CV-11367 WGY
(Alexander, M.J.)

**DEFENDANTS' MEMORANDUM IN SUPPORT OF THEIR MOTION
FOR PARTIAL SUMMARY JUDGMENT ON INVALIDITY OF
U.S. PATENTS NOS. 6,573,483 AND 6,740,855**

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INTRODUCTION

Plaintiff Holmes accuses defendants West Bend and Focus Products (“WB”) of infringing Holmes’ U.S. Patent Nos. 6,573,483 (“the ‘483 patent”) (J.A. at MKM 0001-17) and 6,740,855 (“the ‘855 patent”) (J.A. at MKM0120-38), both entitled “Programmable Slow-Cooker Appliance.” WB now moves for summary judgment of invalidity of the asserted claims of Holmes’ patents.

The asserted claims of Holmes’ patents are directed to a programmable slow cooker in which the programmable controller or circuit (used to select both temperature and time) is mounted and positioned within a housing that is mounted outside the heating unit. Another aspect of Holmes’ patent claims is that the slow cooker automatically lowers the temperature of the heating element after the selected cooking time elapses.

There is nothing new, however, about the use of a programmable controller for selecting both temperature and time in a slow cooker. Prior art slow cookers also utilized the automatic warm feature included in Holmes’ claims. Nor is there anything novel about placing heat sensitive electrical devices, including programmable controllers/circuits, in housings outside the heating unit of a slow cooker.

U.S. Patent 4,307,287 (the “Weiss Patent”) (Ex. A) issued on December 21, 1981, more than nineteen years before Holmes applied for its patents. The Weiss patent discloses an “electric cooking appliance with improvements which enable all kinds of foods, namely both vegetables and meat or fish, to be cooked correctly without supervision.” Weiss Patent, Ex. A, col. 1, ll. 23-26. Weiss teaches a slow cooker in which the operator, using a “control circuit,” sets “the average power [temperature]” and “duration [time]” of the cooking phase. *Id.* at col. 1, ll. 12-22. After the normal cooking phase selected by the user, the control circuit automatically

proceeds to “phase M, at reduced power [temperature], in which the food is kept hot.” *Id.* at col. 4, ll. 67-68. Weiss’ control circuit is housed in an outside “extension.” *Id.* at col. 3, ll. 48-55.

Based upon the prior art Weiss patent and other references discussed below, WB moves for summary judgment of invalidity of the asserted claims of Holmes’ patents.

ARGUMENT

I. There Is No Genuine Issue Of Material Fact That The References Relied Upon By WB Are Prior Art To The Patents-In-Suit

Under 35 U.S.C. § 102(b), “[a] person shall be entitled to a patent unless the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States” Prior art for purposes of obviousness under 35 U.S.C. § 103(a) includes the references identified in Section 102(b). *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1305 (Fed. Cir. 2006). The relevant prior art for purposes of this motion includes

- § Weiss U.S. Patent No. 4,307,287 entitled “Electric Cooking Appliance;”
- § Kowalics U.S. Patent No. 4,817,510 entitled “Cooker Apparatus For Fluid Container;”
- § Norwood U.S. Patent No. 4,345,145 entitled “User Programmable Control System For Toaster Over Appliance;”
- § Holmes’ own Rival Crock Pot slow cooker model no. 3350/2 and Rival’s U.S. Patent Nos. 3,806,701 and 3,881,090; and
- § Park U.S. Patent Nos. 6,191,393.

The Weiss, Kowalics, Norwood, and Rival patents constitute prior art under Sections 102(b) and 103(a) because they were granted more than one year prior to the filing date of both patents-in-suit (i.e., more than one year prior to March 15, 2000). Likewise, Holmes’ Rival Crock Pot model no. 3350 slow cooker constitutes prior art under Sections 102(b) and 103(a)

because it was offered for sale and sold in the United States prior to March 1999. Holmes' 30(b)(6) Deposition Testimony, Ex. B at 16, l. 21 – 17, l. 13. The Park patent constitutes prior art under Sections 102(e) and 103(a) because it was filed before the earliest filing date of the Holmes patents in suit. J.A. at MKM0603.

The first step of an invalidity analysis based on anticipation or obviousness in view of the prior art is no different from an infringement analysis. The meaning and scope of each claim must first be determined, which the Court has already done, as discussed above. *Amazon.com, Inc. v. BarnesandNoble.com, Inc.*, 239 F.3d 1343, 1351 (Fed. Cir. 2001).

Next, the properly construed claims must be applied to the prior art. *Brassica Protection Prods. LLC v. Sunrise Farms (In re Cruciferous Sprout Litig.)*, 301 F.3d 1343, 1346 (Fed. Cir. 2002), *cert. denied*, 538 U.S. 907 (2003). “Section 102(b) may bar patentability by anticipation if the device used in public includes every limitation of the later claimed invention or by obviousness if the differences between the claimed invention and the device used would have been obvious to one of ordinary skill.” *Netscape Commc'ns Corp. v. Konrad*, 295 F.3d 1315, 1321 (Fed. Cir. 2002). A claim is anticipated if a single prior art reference discloses each limitation of the claim, either inherently or explicitly. *Glaxo Inc. v. Novopharm Ltd.*, 52 F.3d 1043, 1047 (Fed. Cir. 1995), *cert. denied*, 516 U.S. 988 (1995). Additionally, a patent claim will be held invalid if the claim would have been obvious to a person of ordinary skill in light of the prior art. 35 U.S.C. § 103. *Specialty Composites, Inc. v. Cabot Corp.*, 845 F.2d 981, 989 (Fed. Cir. 1988). A claim is obvious if, at the time the invention was made, “the combined teachings of the prior art, taken as a whole, would have rendered the claimed invention obvious to one of ordinary skill in the art.” *In re Napier*, 55 F.3d 610, 613 (Fed. Cir. 1995). Obviousness is a question of law based on underlying factual determinations, including: “(1) the scope and

content of the prior art; (2) the level of ordinary skill in the art; (3) the differences between the claimed invention and the prior art; and (4) the extent of any proffered objective indicia of nonobviousness.” *Monarch Knitting Machinery Corp. v. Sulzer Morat GmbH*, 139 F.3d 877, 881 (Fed. Cir. 1998) (citing *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1996)).

“When analyzing a patent claim for obviousness, the claim should be considered as a whole, but the differences between the claim and the prior art need to be identified to place the obviousness analysis into proper perspective.” *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 717 (Fed. Cir. 1991). Indeed, “*Graham* instructs the Court to ascertain the principal differences between the patented claim and the prior art.” *Id.*

Although anticipation is a question of fact, it may be decided on summary judgment if the record reveals no genuine dispute of material fact as to what the prior art discloses. *GE Co. v. Nintendo*, 179 F.3d 1350, 1353 (Fed. Cir. 1999); *Telemac Cellular Corp. v. Topp Telecom, Inc.*, 247 F.3d, 1316, 1327 (Fed. Cir. 2001). Likewise, “where the only issue is, as here, the application of the statutory standard of obviousness (35 U.S.C. § 103) to an established set of facts, there is only a question of law to be resolved by the trial judge.” *Newell Cos., Inc. v. Kenney Mfg. Co.*, 864 F.2d 757, 762 (Fed. Cir. 1988). Thus, “where the ultimate legal conclusion of obviousness is disputed, but not the underlying facts, there is no issue of fact requiring a trial, even though some facts favor obviousness, some nonobviousness.” *Id.* at 763. Indeed, while the underlying facts are subject to proof by clear and convincing evidence, the ultimate legal conclusion of obviousness is not. *Id.* at 767.

The prior art WB relies upon is readily understandable from the supporting exhibits. Like the patent claims at issue, the prior art does not involve complicated technology or scientific principles. Thus, there is no genuine issue of material fact as to what the prior art

references disclose and teach. *See Union Carbide Corp. v. Am. Can Co.*, 724 F2d 1567, 589 (Fed. Cir. 1984). Accordingly, the question of invalidity here can be decided by the Court on summary judgment.

II. The Weiss Patent Invalidates Claims 13, 14, 17 and 19 Of The ‘483 Patent

The Weiss patent anticipates claims 13 and 17 of the ‘483 patent because it teaches every limitation required by these claims. Claims 14 and 19 of the ‘483 patent are obvious in view of Weiss combined with the knowledge of one skilled in the art, Rival’s own prior art Crock Pot, or the Kowalics patent.

A. Weiss Anticipates Claims 13 and 17

The preamble of claim 13 recites “[a] method of using a programmable slow-cooker appliance.”¹ J.A. at MKM0017, col. 8, ll. 26-27. The Court construed a “programmable slow-cooker” as “a cooking device designed for cooking food at a constant, relatively low cooking temperature for a relatively long period of time, being programmable to operate in a variety of different cooking modes and cooking times.” *Markman* Transcript² [hereinafter MKM Tr.] at 3, ll. 8-12. Weiss discloses such a programmable slow cooker that cooks food at a constant, relatively low cooking temperature for a relatively long period of time. Ex. A, col. 1, ll. 23-28 and col. 4, ll. 47-54. Indeed, Weiss states that “with the cooking appliance described, it is possible to carry out, in total safety, diverse types of cooking ranging from simmering at low temperature for a prolonged period of time to deep frying at high temperature. *Id.* at col. 5,

¹ While West Bend maintains that the preamble of claim 13 is not itself a claim limitation, Weiss discloses a programmable slow cooker appliance as recited in claim 13’s preamble.

² The *Markman* Hearing Transcript is already part of the record in this case and was filed with the Court on October 12, 2006 as Exhibit E to Plaintiff’s Counter-Statement of Facts supporting Plaintiffs’ Response to Defendants’ Memorandum In Support Of Their Motion For Partial Summary Judgment Of Noninfringement.

ll. 23-27. Notably, neither claim 13 nor the Court's claim construction for "programmable slow cooker" precludes additional types of cooking such as browning or deep frying. Thus, the fact that Weiss can be used for browning and deep frying does not alter the conclusion that Weiss is a programmable slow cooker. Weiss also operates in a variety of different cooking modes and cooking times, meeting the Court's programmable slow cooker construction. Ex. A, col. 4, ll. 47-57.

Claim 13 comprises four steps. J.A. at MKM0017, col. 8, ll. 26-35. Weiss clearly discloses the first two: 1) cooking of food (*Id.* at col. 1, ll. 21-28) in a 2) cooking unit (removable vessel 12). Ex. A, col. 2, ll. 25-26. Step three requires "selecting a cooking time and temperature using a programmable controller." J.A. at MKM0017, col. 8, ll. 31-32. Weiss discloses an "electronic control circuit 22" that permits an operator to select cooking temperature and cooking time. Ex. A at col. 2, ll. 61-68 and col. 4, ll. 47-57. Weiss has a control panel with regulating knobs that are used to select a cooking power (i.e., temperature) and to select a cooking time in hours and minutes. *Id.* at col. 2, ll. 61-68. Weiss' selection of cooking temperature and method of maintaining the cooking temperature through adjustable application of power to the heating element is the same method described in both the '483 and '855 patents, in which power is supplied to the heating element to select and maintain the cooking temperature. J.A. at MKM 0014, col. 3, ll. 9-12 and col. 6, ll. 1-12; Feinberg Decl.³ ¶ 5. Weiss' control circuit thus meets the requirement of a programmable controller.

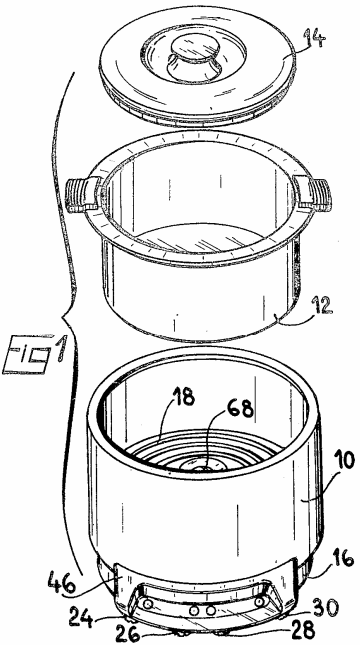
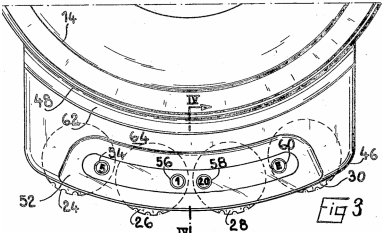
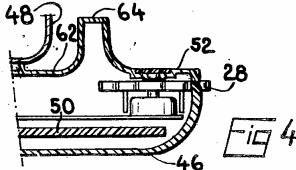
Claim 13 also requires that the programmable controller is "mounted to a housing fixedly mounted to a heating unit." J.A. at MKM0017, col. 8, ll. 32-33. Weiss discloses that its entire

³ "Feinberg Decl." refers to the Declaration of Dr. Barry N. Feinberg in Support of Defendants' Motion for Partial Summary Judgment On Invalidity Of U.S. Patent Nos. 6,573,483 and 7,740,855, filed herewith.

programmable controller (control circuit 22) is mounted to a housing, referred to by Weiss as “extension 46.” Ex. A, col. 3, ll. 48-68. Housing 46 is mounted to and located on the outside of Weiss’ heating unit, referred to by Weiss as casing 10. *Id.* Weiss explains that “this extension [housing 46] projects laterally of the external wall 48 of the casing [heating unit] 10 and houses a plate 50 supporting the control circuit 22 and the switch 20.” *Id.* at col 3, ll. 53-55.

Finally, claim 13 requires “changing the heating unit temperature automatically to a lower temperature after the selected time.” J.A. at MKM0017, col. 8, ll. 34-35. When Weiss is set to its cooking mode “II,” after the food is cooked for the selected time and at the selected temperature, referred to as “cooking phase C,” this cooking phase is automatically “followed by the phase M, at reduced power, in which the food is kept hot.” *Id.* at col. 4, ll. 66-68. That is, a selected cooking temperature is automatically lowered after a cooking time elapses.

The following claim chart shows how Weiss anticipates claim 13 of the ‘483 Patent.

Claim 13	Weiss Patent	
13. A method of using a programmable slow-cooker appliance, the method comprising:	<p data-bbox="630 422 927 495">"[R]emovable vessel 12 [cooking unit] for holding food." (col. 2, ll. 25-26)</p>  <p data-bbox="654 1188 902 1241">Programmable controller / circuit housing 46</p>	
providing a food item;		<p data-bbox="1052 548 1458 642">"an electric cooking appliance . . . which enable all kinds of foods . . . to be cooked." (col. 1, ll. 23-26.)</p>
placing the food item into a cooking unit of the slow-cooker appliance;		
selecting a cooking temperature and time using a programmable controller		<p data-bbox="1052 852 1458 1157">"[T]he control circuit 22 [programmable controller / circuit] has three regulating knobs, namely a first knob 24 intended for setting . . . the average power [cooking temperature] . . . and a second knob 26 and a third knob 28, which are intended for setting . . . the hours and the minutes [cooking time]." (col. 2, ll. 61-68.)</p>
mounted to a housing fixedly mounted to a heating unit; and		<p data-bbox="1052 1220 1458 1430">"[E]xtension [46 / housing] projects laterally of the external wall 48 of the casing 10 [heating unit] and houses a plate 50 supporting the control circuit 22 [programmable controller / circuit] . . ." (col. 3, ll. 53-55.)</p>
changing the heating unit temperature automatically to a lower temperature after the selected time.		<p data-bbox="1052 1493 1458 1640">When set to mode "II," the heating unit temperature automatically changes to a lower temperature after the selected cooking time. (col. 3, ll. 23-46 and col. 4, ll. 66-68.)</p>

Claim 17 includes all the limitations of claim 13 and further requires that “the temperature and time are set in increments.” J.A. at MKM0017, col. 8, ll. 45-46. In the Weiss cooker, the temperature control disc 24 is marked in ten power or temperature increments, and the time control discs 26, 28 are incrementally marked with time settings. Ex. A at col. 3, ll. 62-65. Weiss thus anticipates claim 17.

B. Claims 14 And 19 Are Obvious

Claim 14 recites “the method of claim 13, further comprising notifying a user with illuminated indicators that the slow cooker is powered and the timer is active.” J.A. at MKM0017, col. 8, ll. 36-38. Although the Weiss patent does not disclose the illumination feature of claim 14, the ‘483 patent itself recognizes that this claimed illumination feature was well known to those skilled in the art before the purported invention of the ‘483 patent and would have been an obvious modification to the teachings of Weiss. *See Cable Elec. Prods., Inc. v. Genmark, Inc.*, 770 F.2d 1015, 1025 (Fed. Cir. 1985), *overruled on other grounds by Midwest Indus., Inc. v. Karavan Trailers, Inc.*, 175 F.3d 1356, 1359 (Fed. Cir. 1999) (*en banc*). Specifically, the ‘483 patent recognizes that “[a]s is well-known in the art, a variety of other indicator devices may be provided, including digital readouts, audible alarms, liquid crystal displays, incandescent lamps or fluorescent readouts.” J.A. at MKM0015, col. 3, ll. 34-40. Thus, the knowledge of one skilled in the art would have provided the motivation to add illuminated indicators to show that the Weiss cooker was powered and the timer was active. Feinberg Decl. at ¶ 6.

Moreover, U.S. Patent Nos. 4,817,510 to Kowalics (“Kowalics”) (Ex. C), issued in 1989, and 4,345,145 to Norwood (“Norwood”) (J.A. at MKM0302-52), issued in 1982, also disclose

illuminated indicators showing that the cooker is powered and the timer is active, demonstrating that such indicators were well known in the art and providing ready motivation to illuminate the Weiss controls as a convenience. *See Ormco*, 463 F.3d at 1307-08. Kowalics discloses a cooking appliance that includes a light “to give ready visual indication that power is being supplied to the apparatus” and a pilot light that remains activated to indicate that its timer circuit is operating. Kowalics, Ex. C, col. 5, ll. 27-29 and 64-68. In the Norwood cooking appliance, “when a function LED 48 is lit, this designates that the numeric data shown in the display 44 represents a time parameter.” Norwood, J.A. at MKM0332, col. 5, ll. 44-46. Norwood’s cooking appliance further includes “a light 50 which is turned on whenever the upper heating element 24 is energized and, therefore, the oven cavity 14 is being heated.” *Id.* at col. 5, ll. 46-49. The motivation to combine Kowalics or Norwood with Weiss to produce the purported invention of claim 14 stems from the knowledge of one skilled in the art as well as the nature of the problem already solved by Kowalics and Weiss, namely notifying a user that the cooker is powered and the timer is active. Feinberg Decl. ¶ 7. One skilled in the art would have readily applied the teachings of Kowalics and Norwood to the cooker disclosed in Weiss. *Id.* Moreover, one skilled in the art would have a reasonable expectation of successfully producing the purported invention of claim 14 because the claimed illumination feature was already implemented in the Kowalics and Norwood patents. *Id.* *See Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1309 (Fed. Cir. 2006).

Claim 19 depends from claim 13 and further requires “emitting a sound.” J.A. at MKM0017, col. 8, ll. 50-51. While Weiss does not disclose emitting a sound, the ‘483 patent recognized that a sound emitting feature was already well known in the art. J.A. at MKM0015, col. 3, ll. 34-40. The knowledge of one skilled in the art likewise would have provided the

motivation to include a sound emitting feature with Weiss' cooker. Feinberg Decl., ¶ 8. In addition, both Kowalics and Norwood disclose a sound emitting feature. Ex. C, col. 11, ll. 34-37; J.A. at MKM0335, col. 12, ll. 48-51. One skilled in the art would have been motivated to combine any of these references because the interchangeability of features between cooking appliances would have been readily apparent. Feinberg Decl. ¶ 9. *See Sandt*, 264 F.3d at 1355 (a "slight variation that produced convenience" not patentable). Here, there again is clear and convincing evidence that one skilled in the art would have a reasonable expectation of successfully producing the purported invention of claim 19 through combining Weiss with Kowalics or Norwood because the claimed sound emission feature was already present in these cookers.

III. The Weiss Patent Invalidates Claims 20, 24, 25, 26, 27 And 29 OF The '855 Patent

A. Claim 20 Is Invalid As Obvious

Claim 20 would have been obvious to one skilled in the art because Weiss discloses every limitation of claim 20 except for disposing a heating element between the outer and interior sidewalls of the heating unit. There is absolutely nothing new about this feature and there would have been a ready motivation to include the heating element within the sidewall of Weiss' heating unit, as demonstrated by Holmes' own prior art Rival Crock Pot from the 1970s.

Claim 20 of the '855 patent requires "a heating element mounted to said heating unit and disposed between said outer sidewall and said interior sidewall." J.A. at MKM0137, col. 9, ll. 18-22. In Weiss, the heating element 18 is mounted to the base of the cooking unit 10. Ex. A, col. 2, ll. 27-31 and Figs. 1 and 2. However, there was nothing new about mounting a heating element in the sidewall of the cooking unit. The '855 patent admits that mounting the heating element in the sidewall of the heating unit was part of the prior art and describes "one prior art

embodiment of a food-heating slow-cooker appliance” as having a heating element “mounted to the heating unit 12, either under the bottom 16 or additionally **between the outer sidewall 18 and interior sidewall 17.**” J.A. at MKM0133, col. 2, ll. 37-51. Indeed, Holmes’ Crock Pot cookers have included a heating element located between the sidewalls of the heating unit since at least the 1970s. In addition, two patents from the early 1970s assigned to Rival, Holmes’ predecessor show the use of a heating element between the sidewall of a slow cooker, namely U.S. Patent No. 3,806,701 to Scott (“the ‘701 Scott patent”) (Ex. D) issued on April 23, 1974 and 3,881,090 to Scott (“the ‘090 Scott patent”) (Ex. E.) issued on April 29, 1975. Ex. D, Fig. 1, showing heating element 36 mounted between the sidewall of the heating unit; Ex. E, Fig. 2, showing heating element 36a and 36b mounted between the sidewall of the heating unit.

An actual Rival Crock Pot cooker sold in the United States in the 1970s with a heating element disposed between the interior and outer sidewall of the heating unit is shown below in Fig. A. Ex. B at 182, l. 2 – 183, l. 1.

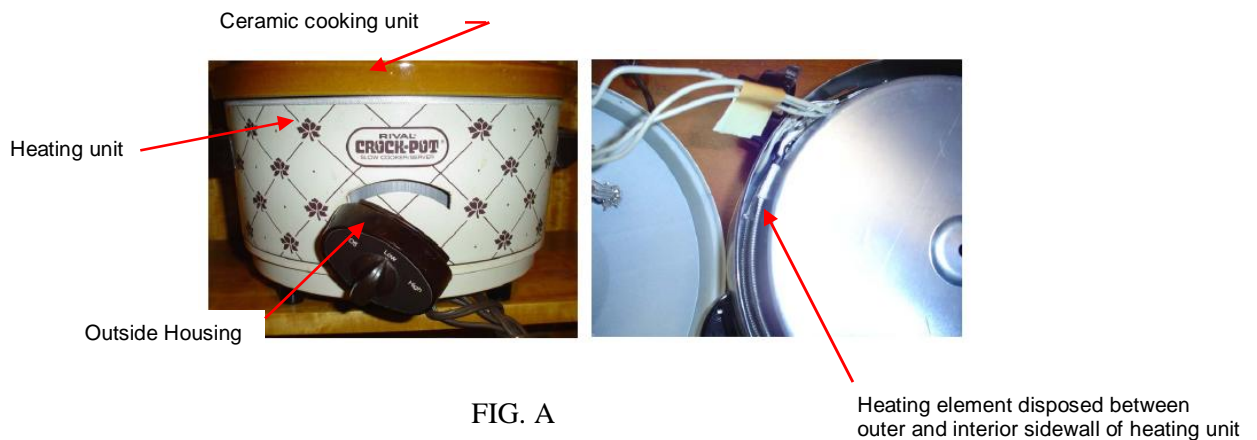


FIG. A

“[T]he motivation leaps at a person of ordinary skill” to combine Weiss with the prior art Rival Crock Pot or Rival patents and place the heating element between the inner and outer sidewalls, and these references demonstrate that such combinations would have been successful.

Para-Ordinance Mfg., Inc v. SGS Importers Int'l, Inc., 73 F.3d 1085, 1090 (Fed. Cir. 1995).

The motivation to combine the Rival prior art Crock Pot cooker or Rival patents with Weiss is very similar to that found in *Sandt Technology Ltd. v. Resco Metal & Plastics Corp.*, 264 F.3d 1344 (Fed. Cir. 2001), where the Federal Circuit held a patent claim for a stainless steel cover for pay telephones invalid for obviousness. *Id.* at 1355. The only relevant difference between the claimed invention and the prior art was that the claimed invention attached the steel cover to the telephone via studs, and the prior art attached it with welds. *Id.* The court explained that this difference was merely a “slight variation that produced convenience.” *Id.* The court found a clear motive to alter the prior art welded cover because “using studs was a cheaper, faster and more convenient method of attachment,” absent even a hint of a suggestion to combine. *Id.*

Here, the placement of the heating element is a matter of convenience, and the prior art demonstrated that for over thirty years, the heating element could be placed in the sidewall of the heating unit. There was nothing new about mounting the heating element in the sidewall of the heating unit, and one skilled in the art would have a reasonable expectation of successfully combining the Rival prior art Crock Pot or Rival patents with Weiss to produce the purported invention of claim 20. Feinberg Decl., ¶ 10.

Claim 20 further requires “a housing fixedly mounted to and projecting outside said continuous sidewall of said heating unit.” J.A. at MKM0137, col. 9, ll. 26-27. As shown in the claim chart above, Weiss includes a housing 46 that is mounted to and largely outside the sidewall 48 of the heating unit 10. Ex. A, col. 3, ll. 48-68.

Claim 20 then recites “a programmable circuit positioned within said housing and configured to automatically switch said heating element from a cook mode to a lower temperature warm mode at the end of a set cooking time.” J.A. at MKM0137, col. 9, ll. 28-31.

Weiss discloses an “electronic control circuit 22” that allows the user to program both the cooking temperature and desired time for cooking. Ex. A at col. 2, ll. 61-68 and col. 4, ll. 47-57. This control circuit 22 also automatically changes the heating element to an automatic warm mode once the set cooking time has expired. When Weiss is set to its cooking mode “II,” after the food is cooked at the selected time and temperature, referred to as “cooking phase C,” this phase is automatically “followed by the phase M, at reduced power, in which the food is kept hot.” *Id.* at col. 4, ll. 66-68. In other words, when the cooking time set by the user expires, Weiss’ control circuit 22 reduces power to a warm mode during which the food is maintained at a predetermined temperature less than the cooking temperature. *Id.* Weiss’ entire control circuit 22 is positioned within housing 46. Weiss explains that “this extension [housing 46] projects laterally of the external wall 48 of the casing [heating unit] 10 and houses a plate 50 supporting the control circuit 22 and the switch 20.” *Id.* at col 3, ll. 53-55.

Claim 20 next requires “a control panel mounted to said housing and including a user interface connected to said programmable circuit for selecting a cooking temperature and cooking time.” J.A. at MKM0137, col. 9, ll. 33-35. As shown in the claim chart above, Weiss has a control panel with a top face 52. The control panel includes several regulating discs that comprise a user interface connected to the programmable circuit 22 for selecting a cooking temperature (disc 24) and a cooking time (discs 26 and 28). Ex. A, col. 2, ll. 61-68; col. 3, ll. 48-65; col. 4, ll. 47-57; and Figs. 1, 3, 4, and 5.

Finally, claim 20 requires a cooking unit removably positioned in said well-like chamber.” J.A. at MKM0137, col. 9, ll. 37-38. Weiss includes a cooking unit 12 that is removably positioned in a well like chamber, as shown above in the claim chart. Ex. A at col. 2,

ll. 22-27 (“The casing 10 receives a removable vessel 12 for holding food which is closed by a lid 14.”)

Weiss in combination with Rival’s prior art Crock Pot cooker thus renders claim 20 invalid as obvious. Weiss discloses every limitation of claim 20 except for mounting the heating element between the sidewall of the heat unit. One skilled in the art would have been motivated to combine Rival’s prior art Crock Pot cooker with Weiss and mount the heating element between the sidewall of Weiss’ cooking unit and would have had a reasonable expectation of successfully doing so.

B. Claims 24 and 29 Are Invalid As Obvious

Claim 24 is dependent from claim 20 and further requires that the “housing is comprised of a thermoplastic material and said cooking unit is comprised of a ceramic material, said cooking unit being removably positioned in said well-like chamber.” J.A. at MKM0137, col. 9, ll. 53-57. Claim 29 also is dependent from claim 20 and requires that the “housing includes a thermoplastic portion adjoining and extending into said continuous sidewall of said heating unit.” J.A. at MKM0137, col. 10, ll. 6-9. While Weiss does not specify the materials used for its housing and cooking unit, the Rival prior art Crock Pot cookers disclose the use of a plastic material for the housing and a ceramic cooking vessel. As shown in Fig. A above, Rival’s model no. 3350/2 cooker includes a housing made from a plastic material. Feinberg Decl., ¶ 11. Also as shown in Fig. A above, the plastic housing of the Rival 3350/2 includes a portion that adjoins and extends into the sidewall of the heating unit. *Id.* In addition, the knowledge of one skilled in the art would have provided a motivation to use a thermoplastic material for Weiss’ housing because thermoplastic plastic materials were recognized as having thermal insulative properties. *Id.* As the Federal Circuit recently stated in finding a patent claim invalid as obvious, “[o]ur

suggestion test is in actuality quite flexible and not only permits, but *requires*, consideration of common knowledge and common sense.” *Dystar Textilfarben GMBH & Co. v. C.H. Patrick Co.*, 464 F.3d 1356, 1367 (Fed. Cir. 2006). Thus, one skilled in the art would have been motivated to use thermoplastic materials in components that a user would touch, such as the housing. Feinberg Decl., ¶ 11.

The Rival prior art Crock Pot also discloses the use of a ceramic cooking unit, and one skilled in the art would have readily used this ceramic cooking unit in the Weiss cooker. Feinberg Decl., ¶ 12. The ‘855 patent also acknowledges that the use of a ceramic cooking unit was part of the prior art. J.A. at MKM0133, col. 2, ll. 66-67. Additionally, the ‘701 and ‘090 Scott patents both disclose the use of a ceramic cooking unit in a Rival Crock Pot. Ex. D, col. 2, ll. 28-31; Ex. E, col. 4, ll. 18-25. Both the prior art and knowledge of one skilled in the art provide the motivation to use a ceramic cooking unit with the Weiss cooker, and one skilled in the art would have a reasonable expectation of successfully doing so. Feinberg Decl., ¶ 12.

Claim 24 is thus invalid as obvious because one skilled in the art would have been motivated to use the thermoplastic housing and ceramic cooking unit of the prior art Rival Crock Pot cooker in combination with Weiss’ cooker. Claim 29 is invalid as obvious because one skilled in the art would have been motivated to have a portion of this thermoplastic housing adjoin and extend into the sidewall of the heating unit as done in the Rival prior art Crock Pot cooker.

C. Claim 26 Is Invalid As Obvious

Claim 26 is dependent from claim 20 and further requires that the “programmable circuit is configured such that a user cannot initially set a lower temperature warm mode.” J.A. at MKM0137, col. 9, ll.62-65. Weiss discloses this limitation because the Weiss cooker cannot

initially be set to a lower temperature warm mode. The user must select either between mode “I,” in which cooking temperature and cooking time are selected, or mode “II,” in which a user selects a cooking time and temperature and after the elapsed time the cooker is automatically switches to a lower temperature warm mode. Ex. A, col. 3, ll. 23-47; col. 4, ll. 47-57 and 66-68. In the Weiss cooker, the cooking cycle must first be completed before the lower temperature warm mode begins. *Id.* Thus, for the same reasons as claim 20, claim 26 would have been obvious in view of the Weiss patent.

D. Claim 27 Is Invalid As Obvious

Claim 27 is dependent on claim 20 and further requires “a switch operatively associated with said control panel, said programmable circuit being configured such that subsequent pushes of said switch activates different cook modes.” J.A. at MKM0137, col. 9, l. 1 - col. 10, l. 3. In the Weiss programmable cooker, subsequent “turns” of the regulating discs, such as disc 30, activate different cook modes instead of the use of switches. However, the knowledge of one skilled in the art would have provided the motivation to use switches instead of buttons because the interchangeable use of knobs and switches was known in the art. Feinberg Decl., ¶ 13. The prior art Norwood patent likewise discloses the use of “user actuable keys,” or switches, to activate different cook modes. J.A. at MKM0332, col. 5, ll. 8-15. U.S. Patent No. 6,191,393 to Park (“Park”) also discloses the use of switches to activate different cooking modes. J.A. at MKM0610, col. 5, ll. 35-42. One skilled in the art thus would have been motivated to use switches in connection with the Weiss cooker to activate different cooking modes and would have had a reasonable expectation of successfully doing so. Feinberg Decl., ¶ 12. The use of a switch in place of Weiss’ regulating discs would have been nothing more than a slight variation

to produce convenience and adds nothing to the patentability of claim 27. *Sandt*, 264 F.3d at 1355. Claim 27 is thus invalid as obvious.

IV. Holmes Has No Evidence Of Secondary Considerations Of Nonobviousness, Which, In Any Event, Would Not Be Relevant

Of course, purported secondary considerations of nonobviousness have no bearing on an invalidity analysis for anticipation under Section 102. As to an obviousness analysis under Section 103, Holmes has no evidence of any secondary considerations to support the nonobviousness of the asserted claims of the '483 and '855 patents. When asked in an interrogatory to provide its evidence of secondary considerations of nonobviousness, Holmes responded by identifying only documents relating to sales of its slow cooker supposedly covered by the patents-in-suit. *See* Holmes' Response to West Bend's Interrogatory No. 7, Ex. F at 8. Commercial success is not pertinent, however, if the features that create the commercial success were known in the prior art. *Ormco*, 463 F.3d at 1312. Here, the prior art shows there was nothing new about the claimed features of the patented slow cooker. *See J.T. Eaton & Co. v. Atl. Paste & Glue Co.*, 106 F.3d 1563, 1571 (Fed. Cir. 1997) ("[T]he asserted commercial success of the product must be due to the merits of the claimed invention beyond what was readily available in the prior art."); *Richdel, Inc. v. Sunpool Corp.*, 714 F.2d 1573, 1580 (Fed. Cir. 1983) (holding claims obvious despite purported showing of commercial success when patentee failed to show that "such commercial success as its marketed system enjoyed was due to anything disclosed in the patent-in-suit which was not readily available in the prior art."). Any alleged commercial success enjoyed by the patented cooker can only be attributable to readily available prior art features because there are no unique characteristics of the claimed invention. Thus, purported commercial success of the claimed cooker is not relevant to nonobviousness here. *In re Haung*,

100 F.3d 135, 140 (Fed. Cir. 1996) (Commercial success “is relevant in the obviousness context only if there is proof that the sales were the direct result of the unique characteristics of the claimed invention.”). See also *Pfaff v. Wells Elecs., Inc.*, 124 F3d. 1429,1439 (Fed. Cir. 1997), *aff’d* 525 U.S. 55 (1998).

V. Conclusion

For the foregoing reasons, WB respectfully requests that summary judgment be entered in its favor that claims 13, 14, 17 and 19 of the '483 patent and claims 20, 24, 26, 27 and 29 of the '855 patent be held invalid under 35 U.S.C. sections 102(b) and 103(a).

Dated: December 1, 2006

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CERTIFICATE OF SERVICE

I certify that, on the above date, this document filed through the ECF system will be sent electronically to the registered participants as identified on the Notice of Electronic Filing (NEF) and paper copies will be sent to those indicated as non registered participants

/s/ Erik P. Belt
Erik Paul Belt

EXHIBIT A

United States Patent [19]

Weiss

[11] 4,307,287

[45] Dec. 22, 1981

[54] ELECTRIC COOKING APPLIANCE

[75] Inventor: Roger Weiss, Crecy-la-Chapelle, France

[73] Assignee: Moulinex, Bagnolet, France

[21] Appl. No.: 206,465

[22] Filed: Nov. 13, 1980

[30] Foreign Application Priority Data

Nov. 28, 1979 [FR] France 79 29252

[51] Int. Cl.³ F27D 11/02

[52] U.S. Cl. 219/442; 99/333; 219/432; 219/433; 219/438; 219/435; 219/441

[58] Field of Search 219/385, 386, 429, 430, 219/432, 433, 435, 438, 439, 441, 442, 521; 99/285, 331, 332, 333, 335

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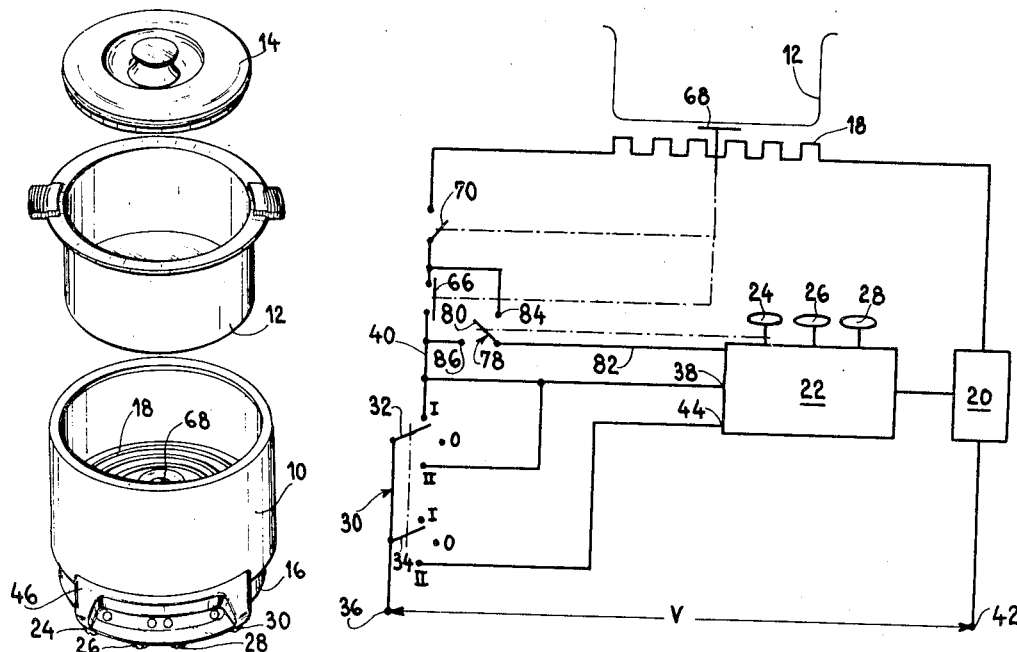
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Primary Examiner—Volodymyr Y. Mayewsky
 Attorney, Agent, or Firm—Young & Thompson

[57] ABSTRACT

The electric cooking appliance has a casing for receiving a removable vessel in which food to be cooked is placed. An electrical heating element is provided in the casing for heating the vessel. The supply of electrical power to the heating element is controlled by a control device including a supply switch and a manually settable control circuit arranged during the normal cooking phase to intermittently place the supply switch in its conducting state so that power is supplied to the heating element intermittently. Prior to the normal cooking phase, the control circuit maintains the supply switch continuously in its conducting state for an initial period of time which is independent of the manual setting of the control circuit.

11 Claims, 7 Drawing Figures

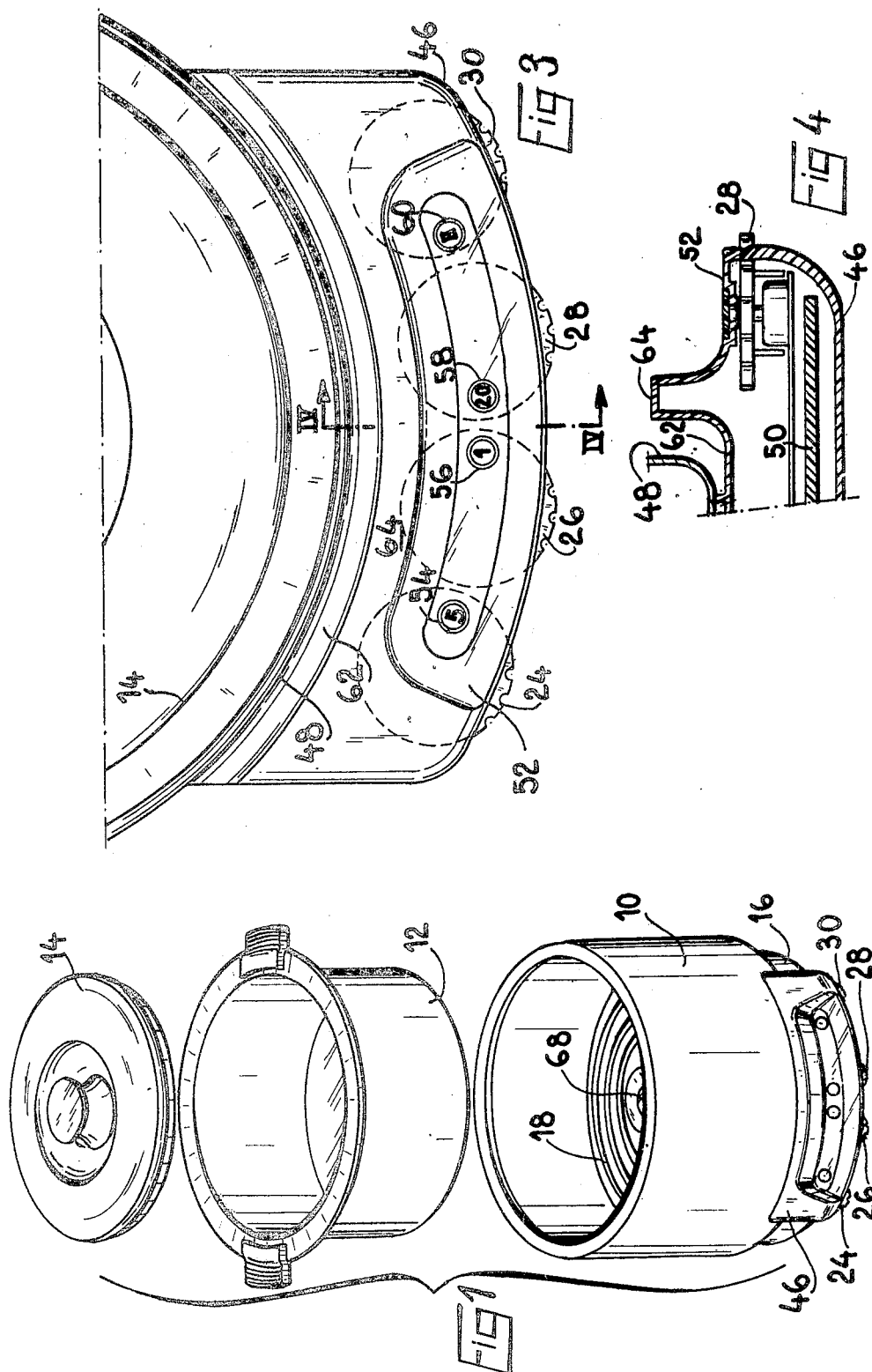


U.S. Patent

Dec. 22, 1981

Sheet 1 of 4

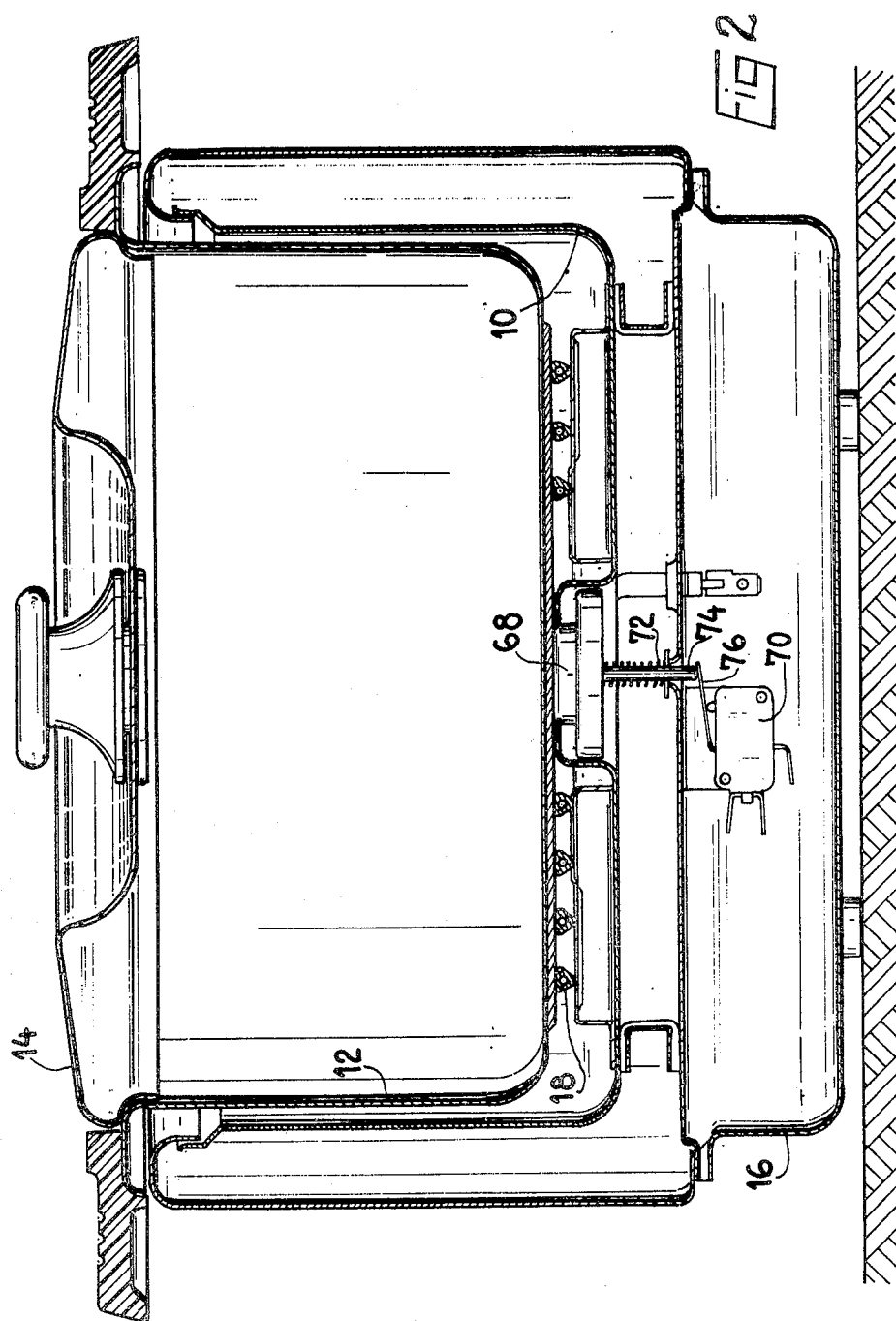
4,307,287



U.S. Patent Dec. 22, 1981

Sheet 2 of 4

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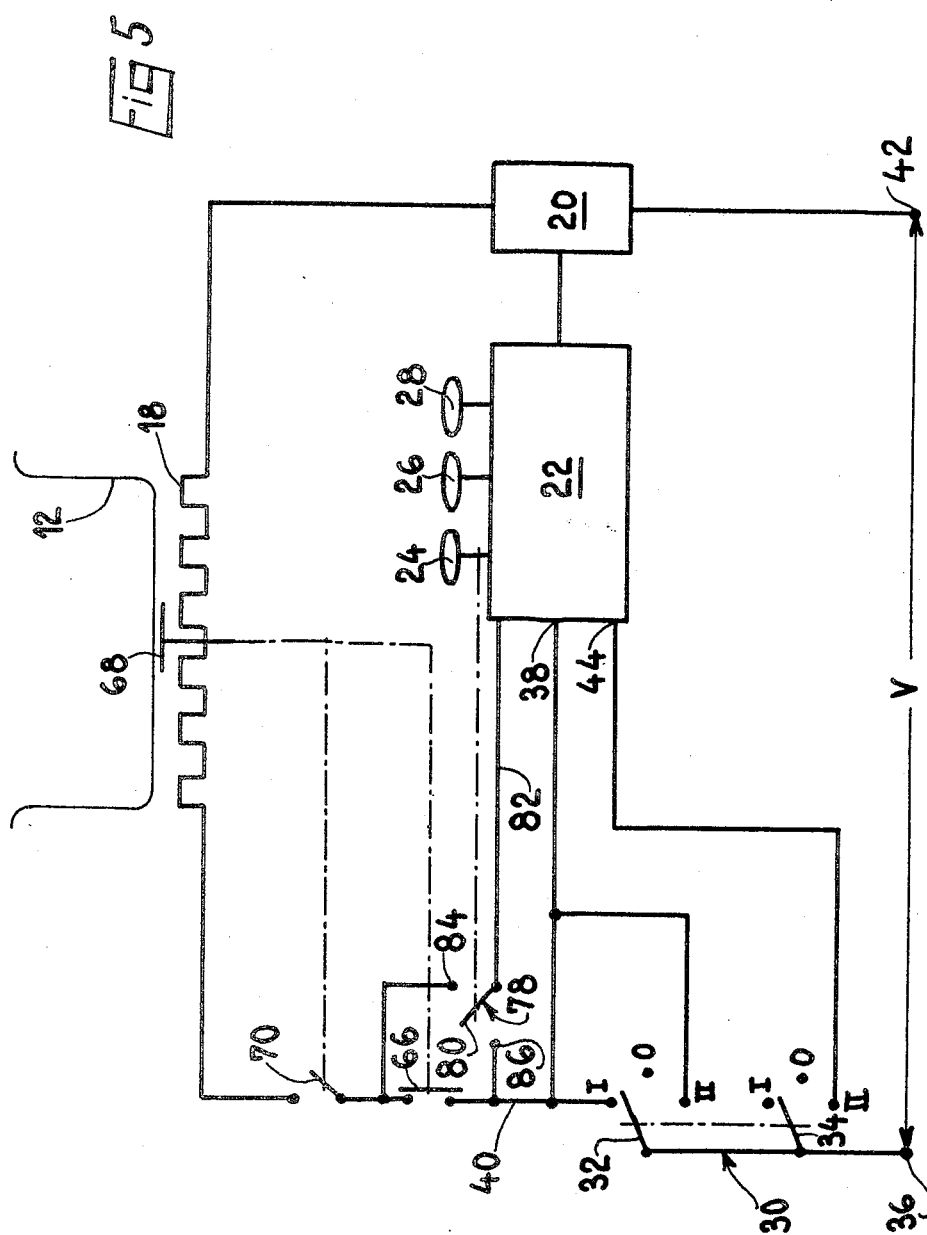


U.S. Patent

Dec. 22, 1981

Sheet 3 of 4

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U.S. Patent

Dec. 22, 1981

Sheet 4 of 4

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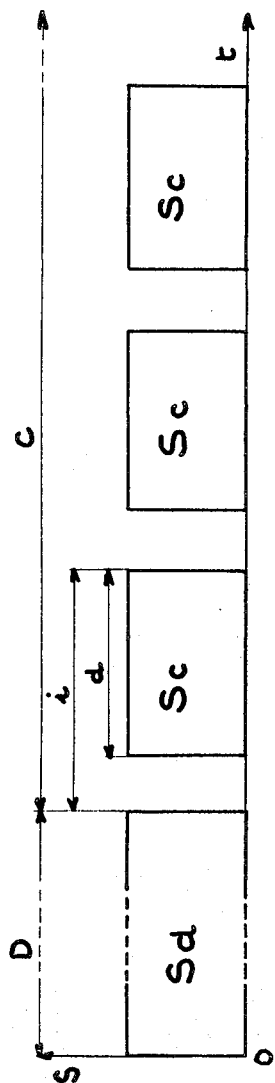


Fig 6

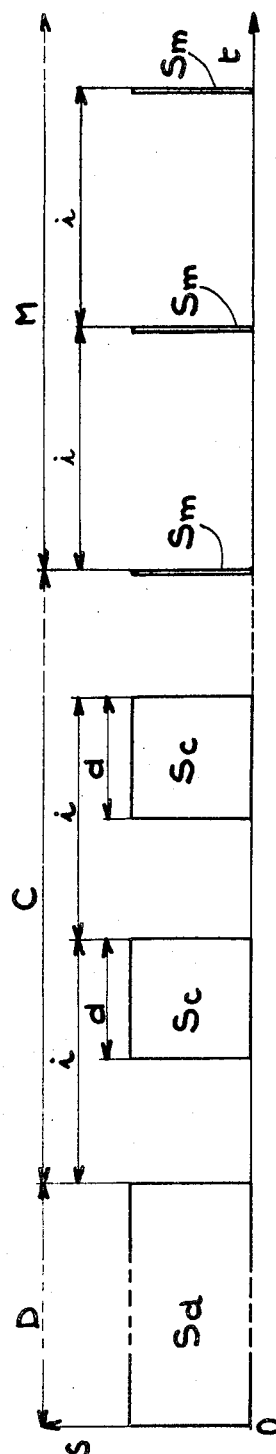


Fig 7

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ELECTRIC COOKING APPLIANCE**BACKGROUND OF THE INVENTION**

The present invention relates to electric cooking appliances which comprise a casing, an electrical heating element in the casing for heating a removable vessel for holding food and positionable in the casing, and a control device for controlling the supply of electrical power to the heating element.

More particularly, the invention relates to electric cooking appliances in which the control device comprises a supply switch which can adopt either a conducting state in which electrical power is applied to the heating element, or a non-conducting state in which power is no longer applied to the said element, and a control circuit which can be set by the user to supply the element intermittently via the supply switch, so that this element thus provides a predetermined average power for a predetermined period of time, referred to as the normal cooking phase.

It is an object of the invention to provide an electric cooking appliance with improvements which enable all kinds of foods, namely both vegetables and meat or fish, to be cooked correctly without supervision, and to cook foods which initially require a particular heating procedure.

SUMMARY OF THE INVENTION

According to the present invention there is provided an electric cooking appliance comprising a casing, a removable vessel for holding food to be cooked positionable in said casing, an electrical heating element mounted in said casing for heating said removable vessel, means for supplying electrical power, and a control device for controlling the supply of electrical power from said means to the heating element, said control device comprising a supply switch which can adopt a conducting state in which electrical power is supplied to said element and a non-conducting state in which electrical power is not supplied to said element, and a manually settable control circuit for controlling the state of the supply switch and operable during a normal cooking phase to place the supply switch intermittently in its conducting state such that the element provides a predetermined average power for a predetermined period of time, wherein the control circuit is arranged prior to the normal cooking phase to maintain the supply switch continuously in its conducting state for an initial period of time which is independent of the manual setting of the control circuit.

Preferably, the initial period of time is between one and five minutes.

Thus, the heating element provides its full nominal power in the initial period which forms an initial cooking phase and this causes accelerated heating of the vessel for holding food, which makes it possible, for example, suitably to brown the food in the fat before subjecting it to prolonged cooking.

BRIEF DESCRIPTION OF THE DRAWINGS

An embodiment of the present invention will herein-after be described, by way of example, with reference to the accompanying drawings, in which:

FIG. 1 is an exploded perspective view of an electric cooking appliance of the present invention;

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FIG. 2 shows, on a larger scale, a vertical section of the appliance of FIG. 1;

FIG. 3 is a top view of the control panel of the appliance;

FIG. 4 shows a partial vertical section taken along the line IV—IV of FIG. 3;

FIG. 5 shows schematically the circuit of a control device for controlling the heating element of the appliance;

FIG. 6 is a diagram illustrating the heating procedure of the element, as a function of time, when the average power supplied to the element during the normal cooking phase is equal to three-quarters of the nominal power; and

FIG. 7 is an analogous diagram to FIG. 6 when the average power is equal to half the nominal power and when the normal cooking phase is followed by a phase in which the food is kept hot.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

As is shown in FIG. 1, an electric cooking appliance of the invention comprises a casing 10 having the general shape of a cylindrical well which is supported on a base 16. The casing 10 receives a removable vessel 12 for holding food which is closed by a lid 14. A heating element in the form of a spiral shielded resistance 18 for heating the vessel 12, is arranged within the casing 10 in the region of its bottom and is disposed in a horizontal plane.

A device for controlling the resistance 18 is arranged in the base 16. As shown in FIG. 5, this device comprises an electronic supply switch 20 which can adopt either a conducting (ON) state, in which the voltage V of the mains is applied to the resistance 18, or a non-conducting (OFF) state, in which the mains voltage is no longer applied to this resistance, and an electronic control circuit 22 which the user can set in order to supply the resistance 18 intermittently via the supply switch 20 such that the resistance 18 provides a predetermined average power for a predetermined period of time, referred to as the normal cooking phase. For this purpose, as illustrated in FIGS. 6 and 7, during the normal cooking phase C, the control circuit 22 supplies the switch 20, at regular intervals i, with control signals Sc which keep this switch in the conducting state throughout their duration d, the duration d being dependent upon the setting of the circuit 22 selected by the user, the average power supplied to the resistance 18 thus being proportional to the ratio of the duration d to the interval i. Thus, in the case of FIG. 6, this average power is equal to three-quarters of the nominal power of the resistance, for example equal to 1,200 watts if the said nominal power is 1,600 watts; on the other hand, in the case of FIG. 7, the average power is equal to half the said nominal power, that is to say equal to 800 watts in the example in question. Preferably, the interval i is between ten and sixty seconds, for example about forty seconds.

As shown schematically in FIG. 5, the control circuit 22 has three regulating knobs, namely a first knob 24 intended for setting the duration d of the control signals Sc, that is to say for setting the average power during the phase C, and a second knob 26 and a third knob 28, which are intended for setting the duration of the phase C and are reserved respectively for setting the hours and the minutes.

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Prior to the normal cooking phase C, the control circuit 22 automatically maintains the supply switch 20 in its conducting state (signal Sd) for a period of time D, referred to as the initial cooking phase, which is invariable regardless of the setting of the circuit 22 and which is preferably between one and five minutes, for example, approximately three minutes.

The device for controlling the resistance 18 also comprises a circuit-breaker 30 comprising two movable armatures 32 and 34 mechanically joined to one another (FIG. 5) and connected to a terminal 36 of the mains. Each armature 32, 34 can contact any one of three contact studs I, O and II. The contact studs I and II associated with the armature 32 are connected to a first input 38 of the control circuit 22 and also to a supply line 40 for the resistance 18, which resistance is also connected to the other terminal 42 of the mains via the switch 20. The stud II associated with the armature 34 is connected to a second input 44 of the circuit 22. The contact studs O associated with the armatures 32 and 34, and the contact stud I associated with the armature 34 are all electrically isolated.

When the armatures 32 and 34 of the circuit-breaker 30 occupy a first position, referred to as the simple cooking position, that is when they are each in contact with the respective stud I, the control circuit 22, which is then activated by way of its input 38, normally ensures the supply to the resistance 18 throughout cooking (phases D and C) and switches off the supply at the end of the cooking period, that is at the end of the period which has been set by the user by way of the knobs 26 and 28. On the other hand, when the armatures 32 and 34 occupy a second position, referred to as the cooking position with a phase in which the food is kept hot, that is when they are each in contact with the respective stud II, the control circuit 22, which is then also activated by way of its input 44, not only ensures cooking (phases D and C) but subsequently supplies the switch 20, at regular intervals, with short control signals Sm (FIG. 7) of which the duration (for example of less than one second) is invariable regardless of the setting of the circuit 22. This phase M, in which the food is kept hot after cooking, continues until the armatures 32 and 34 of the circuit-breaker 30 are each brought into contact with the respective stud O, that is into the position in which the appliance is totally switched off.

As shown clearly in FIGS. 3 and 4, the regulating knobs 24, 26 and 28 and a knob for operating the circuit-breaker 30 each consist of a disc which is mounted so as to be rotatable about a vertical spindle in an extension 46 of the base 16, which extension constitutes a control panel. This extension projects laterally of the external wall 48 of the casing 10 and houses a plate 50 supporting the control circuit 22 and the switch 20. On its external edge, the control panel 46 possesses four slots through which a segment of each of the four discs 24 to 30 projects, the projecting segments forming the operating contacts of these discs. On its top face 52 the control panel has four small transparent convex lenses 54, 56, 58 and 60, which make it possible to see indications carried by the respective discs. The disc 24 carries FIGS. 1 to 10 which represent power markings, the disc 26 carries FIGS. 1 to 5 which indicate hours, the disc 28 carries figures in tens which indicate minutes, and the disc 30 carries the signs I, O and II. A channel 62 is formed in the top face 52 of the control panel adjacent the external wall 48 of the casing 10. This channel 62 is arranged to

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collect any liquid overflowing from the vessel 12 and thus to prevent the liquid reaching the slots through which the segments of the knobs 24 to 30 project. This channel 62 is separated from these knobs by a boss 64 which forms a protection barrier.

The device for controlling the resistance 18 (FIG. 5) also comprises a thermostat 66 for limiting the temperature (for example to 175° C.), which is connected in series with the resistance 18 and which is controlled by a temperature-detecting sensor 68 applied elastically against the bottom of the vessel 12. In addition, the device comprises a safety switch 70, which is connected in series between the thermostat 66 and the resistance 18 and which is closed when the vessel 12 is placed within the casing 10. As shown in FIG. 2, the sensor 68 is located in the central region of the resistance 18 and is mounted to move vertically against the action of a spring 72 which surrounds a rod 74 which is fixed to the sensor 68. The rod 74 simultaneously controls a contact 76 for operating the safety switch 70.

The device for controlling the resistance 18 further comprises a contactor 78 (FIG. 5) which comprises a movable armature 80 connected to a line 82 for activating the control circuit 22 and two contact studs 84 and 86 connected to respective terminals of the thermostat 66. The supply of control signals Sc by the control circuit 22 is dependent upon the application of the mains voltage V to the line 82, and therefore when the armature 80 is in its position in contact with the stud 84, signals Sc are only emitted when the thermostat 66 is closed, whereas when the armature is in its second position in contact with the stud 86, the control signals are emitted independently of the state of the thermostat. The movable armature 80 is mechanically connected to the power-regulating knob 24 such that the armature is in its first position (stud 84) for the low powers (for example markings 1 to 3 on the knob 24) and is in its second position (stud 86) for higher powers (for example markings 4 to 10). Thus, for low powers, the thermostat 66 acts as a safety device capable of switching off the appliance when the temperature of the vessel rises above a predetermined value, whereas, for higher powers, the thermostat 66 acts as a control device capable of maintaining the vessel at the predetermined temperature (about 175° C.).

To operate the appliance, the vessel 12 containing the food to be cooked is placed in the casing 10, the user sets the power-regulating knob 24 to a position suitable for the food to be cooked (for example position 5, corresponding to an average power of 800 watts, as shown in FIG. 3), and then the user sets the knobs 26 and 28 to the positions corresponding to the time desired for normal cooking (for example 1 hour 20 minutes). The user then sets the knob 30 either to position I for simple cooking, or to position II for cooking with a phase in which the food is kept hot (as in the example of FIG. 3).

As from this moment, because the thermostat 66 and the switch 70 are closed, the initial cooking phase D starts automatically and the resistance 18 continuously provides its full nominal power. During this phase D, the vessel 12 rapidly reaches a high temperature which, for example, enables the user suitably to brown pieces of meat in fat, prior to subjecting them to prolonged cooking.

After the phase D, the normal cooking phase C proceeds, followed, if appropriate, by the phase M, at reduced power, in which the food is kept hot.

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If, for example for the full-power setting (position 10 of the knob 24 and hence the second position of the armature 80), the temperature of the vessel during phase C exceeds the predetermined value allowed by the thermostat 66, this thermostat opens and, acting as a control device, cuts off the supply to the resistance 18; the vessel then cools slightly until it reaches the threshold value of the thermostat, at which value the thermostat closes again and resumes the supply to the resistance.

If, for a lower-power setting (positions 1 to 3 of the knob 24 and hence the first position of the fitting 80), the temperature of the vessel during phase C exceeds the predetermined value allowed by the thermostat 66, as a result of an abnormal condition, such as insufficient water in the food which is being cooked, the thermostat 66 opens and, acting as a safety device, stops the operation of the circuit 22 and hence the operation of the appliance.

If, for some reason, the user removes the vessel 12 from the casing 10, the sensor 68 rises by the action of the spring 72, and this causes the switch 70 to open and the heating to stop.

Thus, with the cooking appliance described it is possible to carry out, in total safety, diverse types of cooking ranging from simmering at low temperature for a prolonged period of time to deep frying at high temperature.

I claim:

1. Electric cooking appliance comprising a casing, a removable vessel for holding food to be cooked positionable in said casing, an electrical heating element mounted in said casing for heating said removable vessel, means for supplying electrical power, and a control device for controlling the supply of electrical power from said means to the heating element, said control device comprising a supply switch which can adopt a conducting state in which electrical power is supplied to said element and a non-conducting state in which electrical power is not supplied to said element, and a manually settable control circuit for controlling the state of the supply switch and operable during a normal cooking phase to place the supply switch intermittently in its conducting state such that the element provides a predetermined average power for a predetermined period of time, wherein the control circuit is arranged prior to the normal cooking phase to maintain the supply switch continuously in its conducting state for an initial period of time which is independent of the manual setting of the control circuit.

2. Cooking appliance according to claim 1, wherein said initial period of time is between one and five minutes.

3. Cooking appliance according to claim 2, wherein said initial period of time is approximately three minutes.

4. Cooking appliance according to claim 1, wherein the supply switch is an electronic switch and the control circuit is an electronic circuit, and wherein, during the normal cooking phase, the electronic control circuit supplies a plurality of control signals of equal duration to said supply switch at regular intervals, each control signal being arranged to keep the supply switch in its conducting state throughout its duration, the said duration of the control signals being dependent upon the manual setting of said control circuit, and the average power supplied to the resistance being proportional to the ratio of the duration of the control signals to the interval between control signals.

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5. Cooking appliance according to claim 4, wherein the interval between the control signals is between ten and sixty seconds.

6. Cooking appliance according to claim 4, wherein the control circuit comprises first, second and third regulating knobs, the first knob being arranged to set the duration of the control signals and thus to set the average power, and the second and third knobs being arranged to set the duration of the normal cooking phase, the second knob being arranged to set the hours and the third knob being arranged to set the minutes of the duration of the normal cooking phase.

7. Cooking appliance according to claim 1, wherein said control device further comprises a thermostat connected in series with said element for limiting the temperature of said vessel, and a sensor for detecting the temperature of said vessel connected to control said thermostat.

8. Cooking appliance according to claim 6, wherein the control circuit has a control line and the supply of control signals by said control circuit is dependent upon the supply of electrical power to said control line, and wherein the control device further comprises a contactor for controlling the supply of electrical power from said means to said control line, said contactor having a movable armature movable between a first position and a second position, a thermostat connected in series with said element for limiting the temperature of said vessel, connected to control said thermostat, and wherein in the first position of the armature of the contactor the thermostat is connected in series with the control line and in the second position of the armature the control line is independent of the thermostat, the armature of the contactor being mechanically connected to said first knob of the control circuit such that it is in its first position for low power settings and is in its second position for higher power settings.

9. Cooking appliance according to claim 7 or claim 8, wherein said sensor of the thermostat is mounted so as to be movable against the action of a spring, and said sensor is arranged to operate a safety switch which is connected in series with said element, the closing of said safety switch being dependent upon the placing of the vessel within the casing.

10. Cooking appliance according to claim 4, wherein said control device further comprises a circuit-breaker which can occupy either a first position for simple cooking, in which the control circuit ensures the supply to the element throughout cooking and completely cuts it off when this cooking has ended, or a second position for cooking with a phase in which the food is kept hot, in which the control circuit, after cooking, supplies the supply switch, at regular intervals with short control signals, the duration of which is invariable regardless of the setting of the said control circuit.

11. Cooking appliance according to claim 6, wherein the casing has the shape of a cylindrical well and is supported by a base, said resistance being arranged in a horizontal plane in the region of the bottom of the well, and wherein said regulating knobs are arranged in an extension of the base which projects laterally relative to the external wall of the said well, said extension housing a plate supporting the control circuit and the supply switch, and said extension possessing, on its upper face, a channel adjacent the external wall of the well and separated from the said knobs by a protection boss.

* * * * *

EXHIBIT B

30(b)6 DEPOSITION OF THE HOLMES GROUP, NOVEMBER 16, 2006
CONFIDENTIAL - ATTORNEYS' EYES ONLY

Page 1

CONFIDENTIAL - ATTORNEYS' EYES ONLY

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS

C.V. No: 05-CV-11367WGY

* * * * *
THE HOLMES GROUP,
Plaintiff,
vs.
WEST BEND HOUSEWARES and FOCUS
PRODUCTS GROUP, LLC.
Defendants.
* * * * *

30(b)6 DEPOSITION OF THE HOLMES GROUP,
a witness called on behalf of the
Defendants, pursuant to the Massachusetts
Rules of Civil Procedure, before Janet
Chase, a Certified Shorthand Reporter and
Notary Public in and for the Commonwealth of
Massachusetts, at the Radisson Hotel, 11
Beaver Street, Milford, Massachusetts, on
Thursday, November 16, 2006, commencing at
9:05 a.m.

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30 (b) 6 DEPOSITION OF THE HOLMES GROUP, NOVEMBER 16, 2006
CONFIDENTIAL - ATTORNEYS' EYES ONLY

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11 **REDACTED**
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21 Q. If you would turn to what we have marked as
22 Exhibit No. 10 of this exhibit refers to a
23 model 3350, crock pot 3350. Are you
24 familiar with that product?

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Page 17

1 A. I know of the product.

2 Q. Okay. Do you know when it first went on
3 sale?

4 A. No.

5 Q. Do you know if it went on sale before
6 January 1, 1999?

7 A. I know that it did. It went on sale before
8 the Holmes Group purchased Rival.

9 Q. And how can you then say that it went on
10 sale prior to January 1, 1999 based upon
11 that sale?

12 A. Well, they bought the company in February of
13 1999.

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18 **REDACTED**
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30(b)6 DEPOSITION OF THE HOLMES GROUP, NOVEMBER 16, 2006
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(Discussion off the record)

Q. I'm going to show you what we are going to
mark as Exhibit No. 24.

A. Okay.

Q. And is this model is disassembled. Okay.
Is that a 3350 Crock Pot?

A. It says 3350 on the bottom of it.

Q. Okay. Is that like the unit that you looked
at in preparation for this deposition?

A. Fairly close.

Q. Okay. Now, that unit has been an interior
and an exterior side wall, correct?

A. Yes.

Q. Okay. And the heating element -- if I can
get this --

MR. SACK: I think you meant
exterior.

Q. It has an interior and an exterior sidewall,
correct?

A. Yes.

Q. Okay. And the heating element in that unit
is between the interior and the exterior --
the interior and the exterior side walls,
correct?

30 (b) 6 DEPOSITION OF THE HOLMES GROUP, NOVEMBER 16, 2006
CONFIDENTIAL - ATTORNEYS' EYES ONLY

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1 A. Yes.
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EXHIBIT C

United States Patent [19]**Kowalics et al.**[11] **Patent Number:** **4,817,510**[45] **Date of Patent:** **Apr. 4, 1989**[54] **COOKING APPARATUS FOR FLUID CONTAINER**[75] **Inventors:** **Raymond P. Kowalics, Solon;**
Kenneth C. Sidoti, Maple Heights;
Richard L. Beery, Shreve, all of Ohio[73] **Assignee:** **The Meyer Company, Cleveland,**
Ohio[21] **Appl. No.:** **888,849**[22] **Filed:** **Jul. 22, 1986****Related U.S. Application Data**

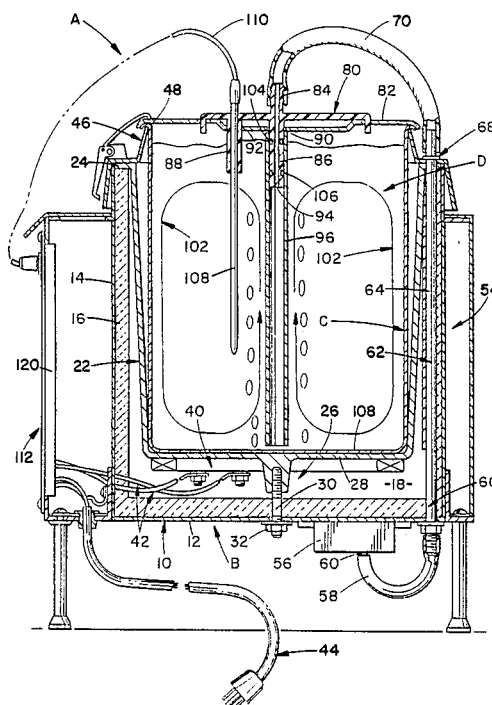
[63] Continuation-in-part of Ser. No. 849,780, Apr. 9, 1986, abandoned.

[51] **Int. Cl.⁴** **A47J 27/62**[52] **U.S. Cl.** **99/331; 99/332;**
99/335; 99/348; 126/374; 126/387; 426/523[58] **Field of Search** **99/331, 332, 334, 335,**
99/342, 344, 348; 219/432, 433, 436, 438, 441,
442, 497; 366/101; 426/231, 523; 126/387, 374,
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Primary Examiner—James Kee Chi*Attorney, Agent, or Firm*—Fay, Sharpe, Beall, Fagan,
Minnich & McKee[57] **ABSTRACT**

A cooking apparatus includes a recessed area adapted to receive an associated fluid container for cooking soup and similar food products. Means for heating the recessed area as well as insulating means therearound minimizes heat loss and effectively heats the fluid container. Means for mixing the soup held in the container preferably includes an air pump and a flow passage disposed between the base and the container. Means for sensing the temperature in the fluid container is coupled with a control means for monitoring the soup temperature and, in response, controlling the heating means. Various timing means provide an automated cooking cycle which reduces the soup temperature to a lower temperature after cooking for a preselected time period, and actuates an indicating means for either automatic or manual shutoff.

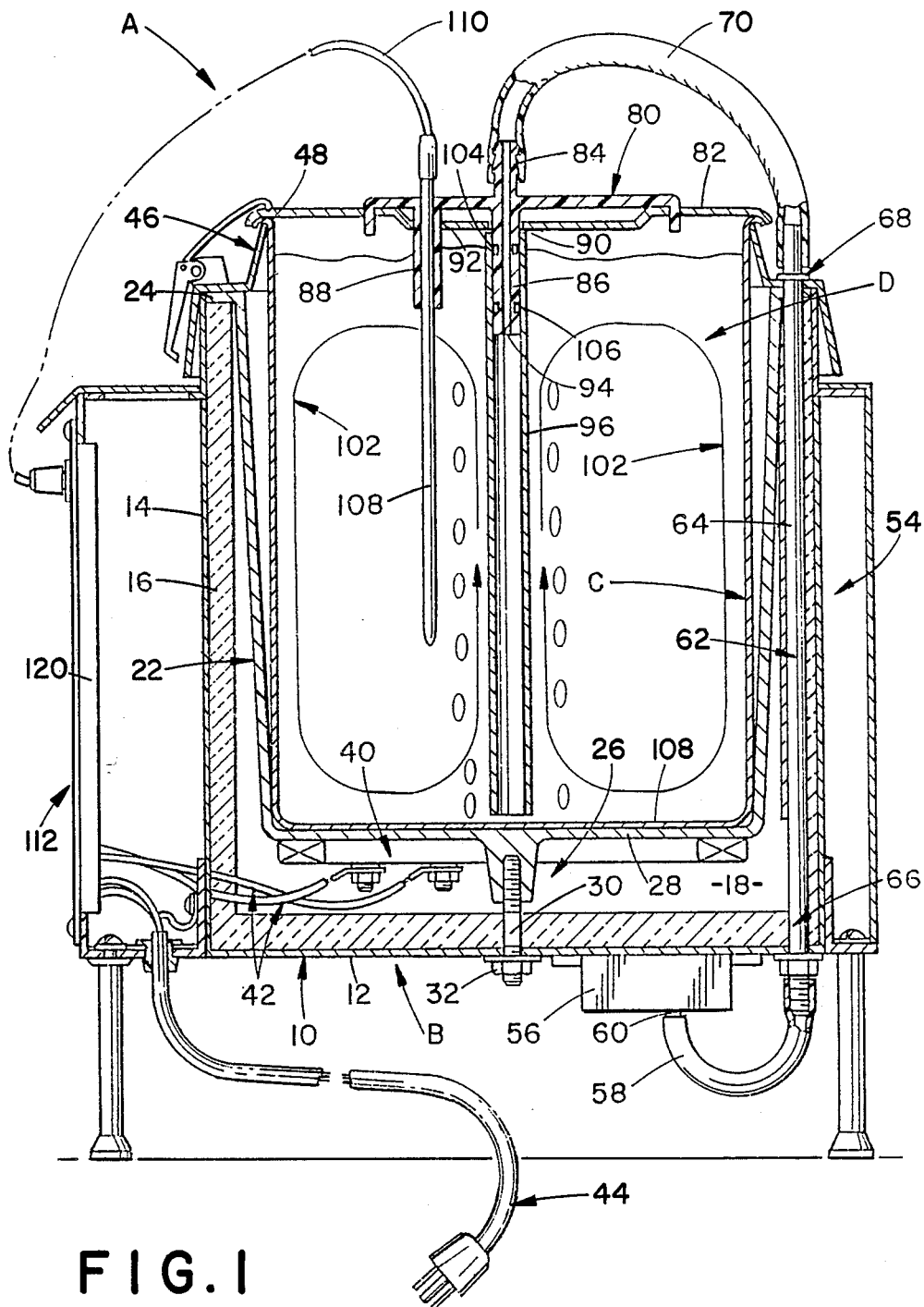
14 Claims, 8 Drawing Sheets

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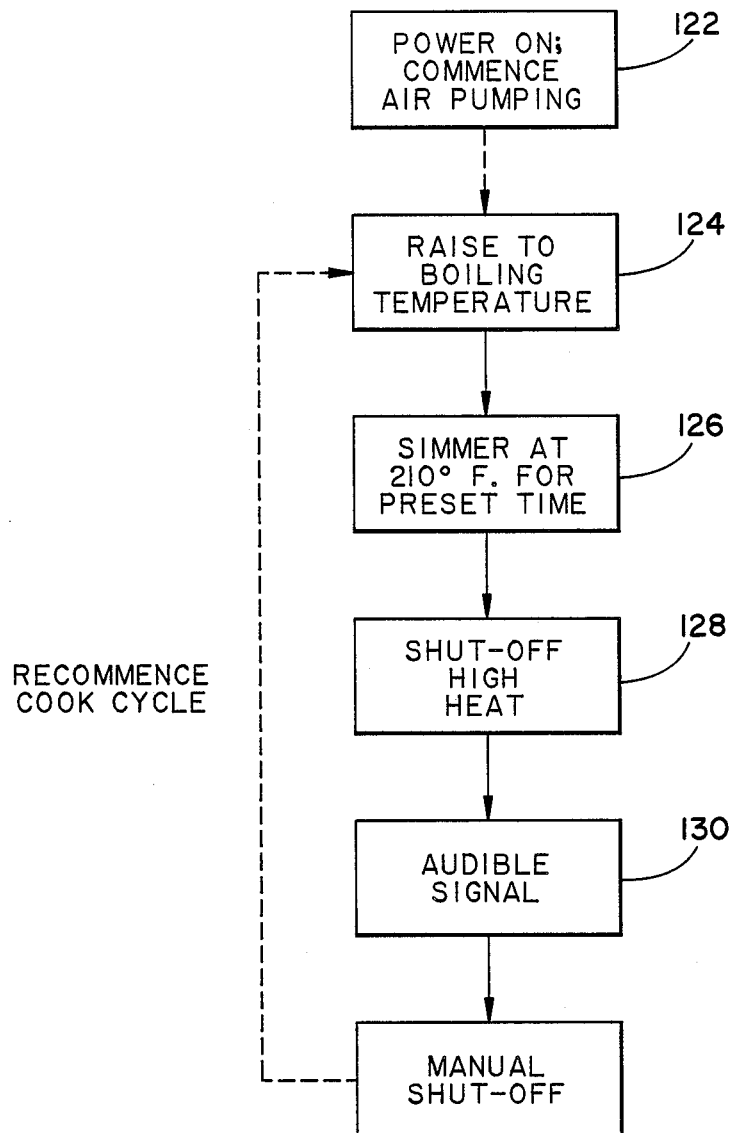


FIG. 2

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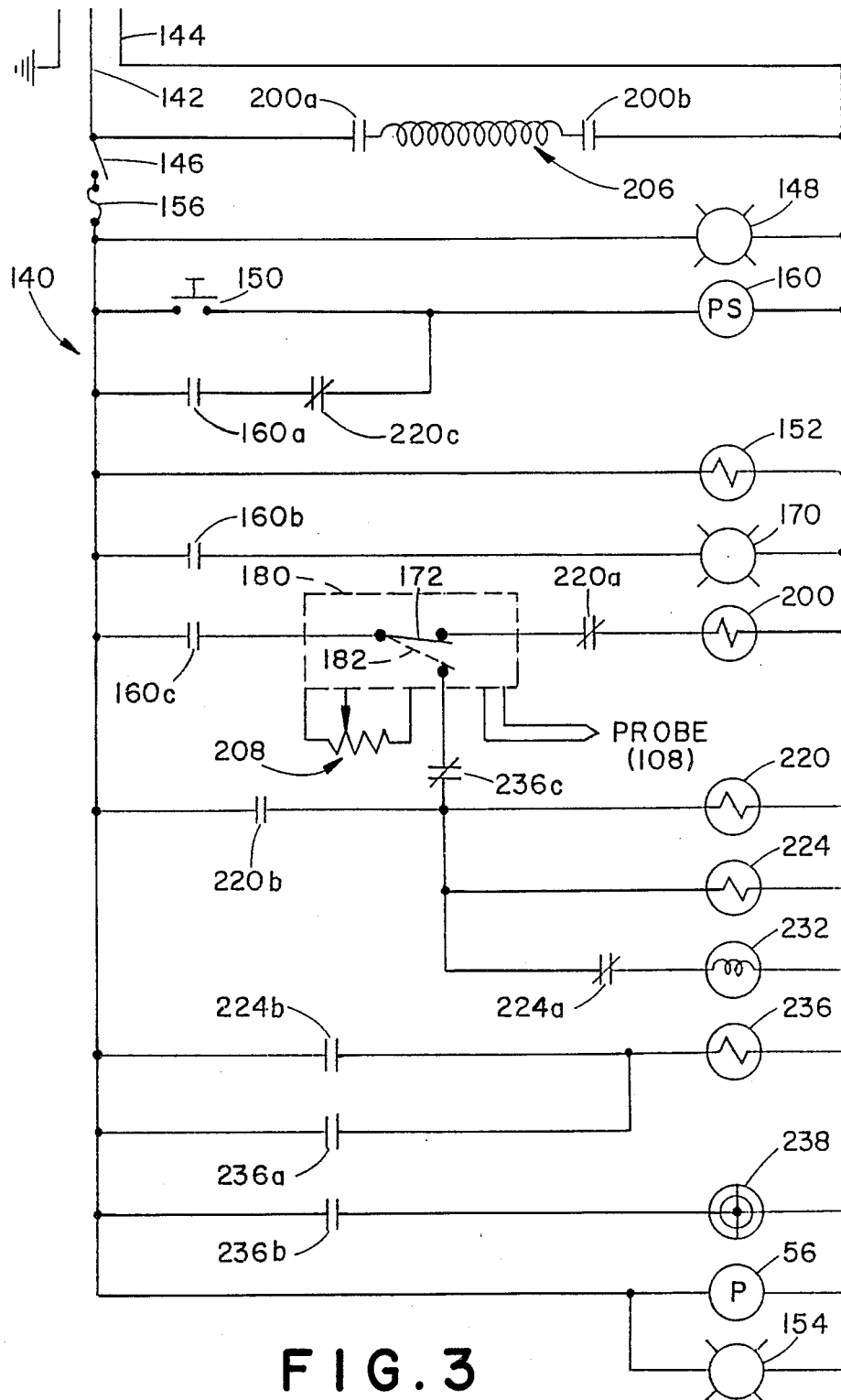


FIG. 3

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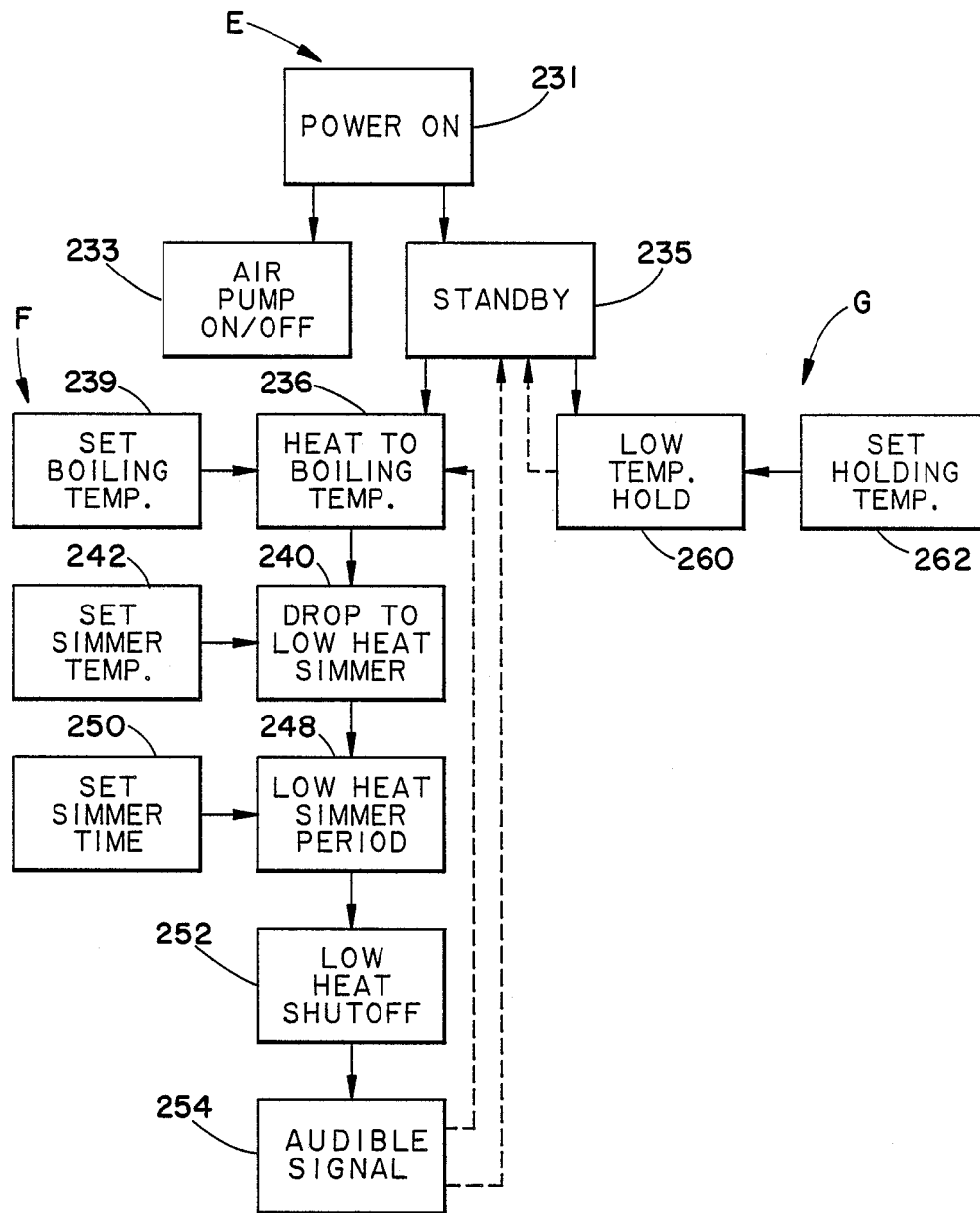


FIG. 4

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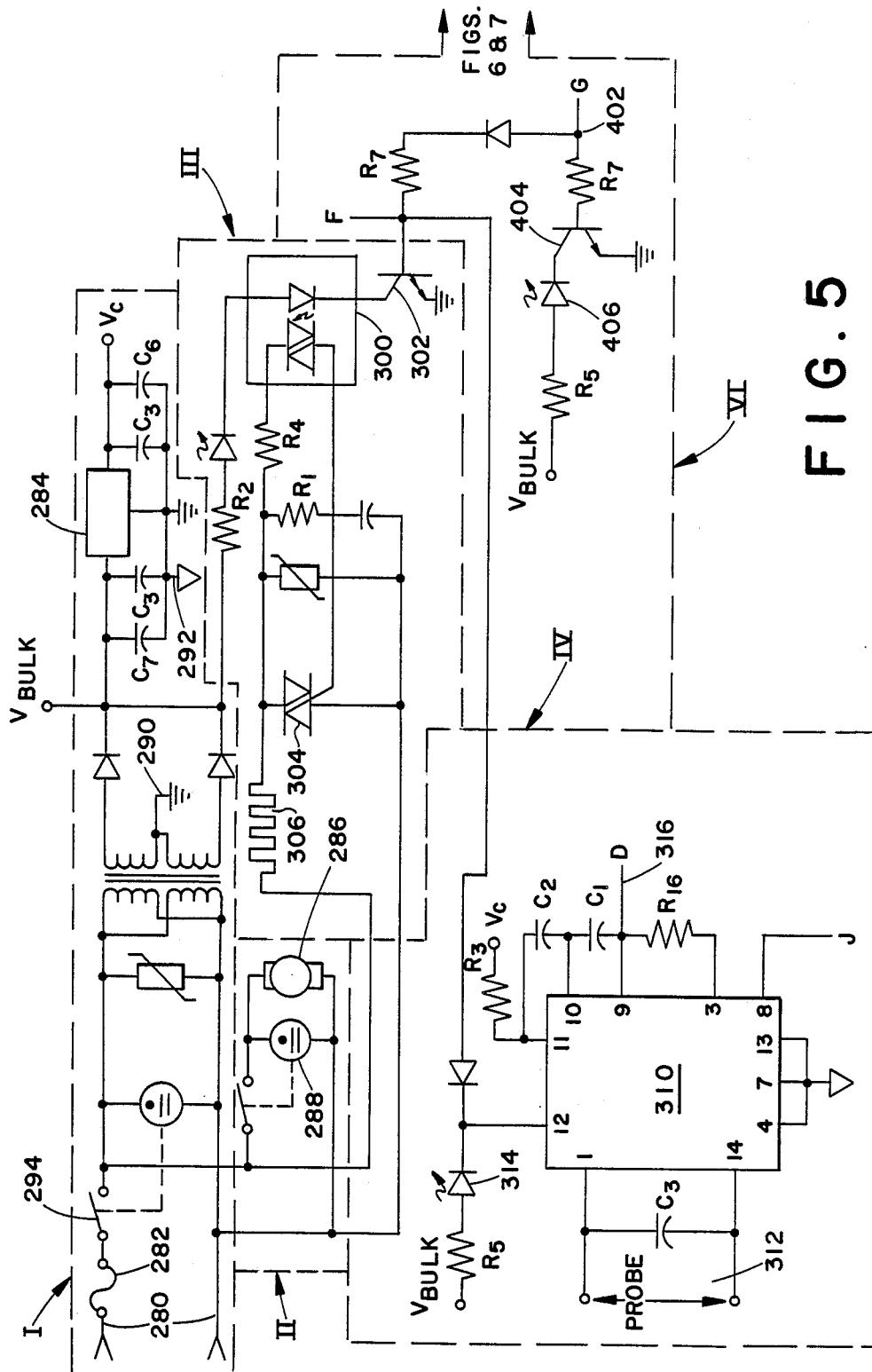
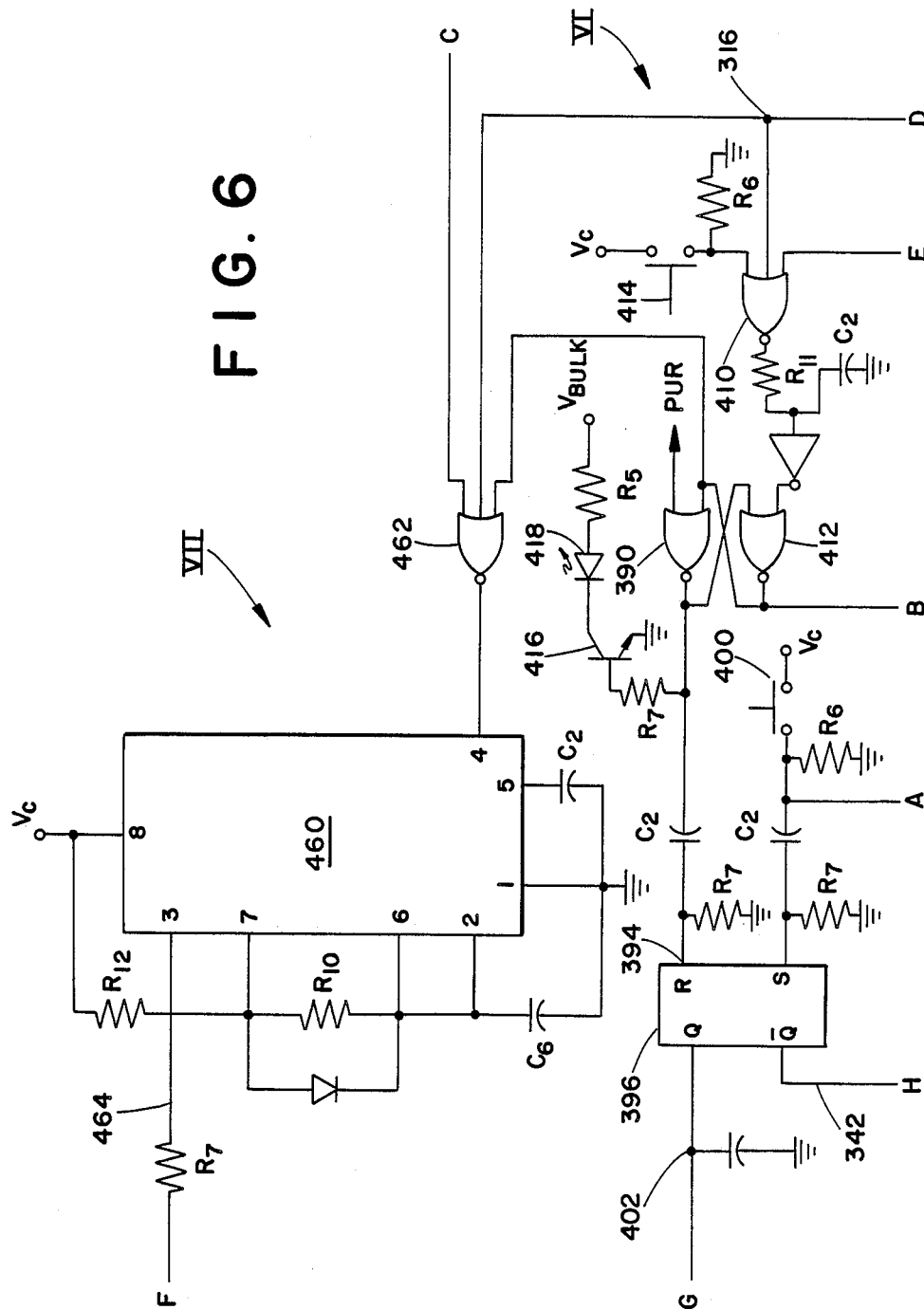


FIG. 5

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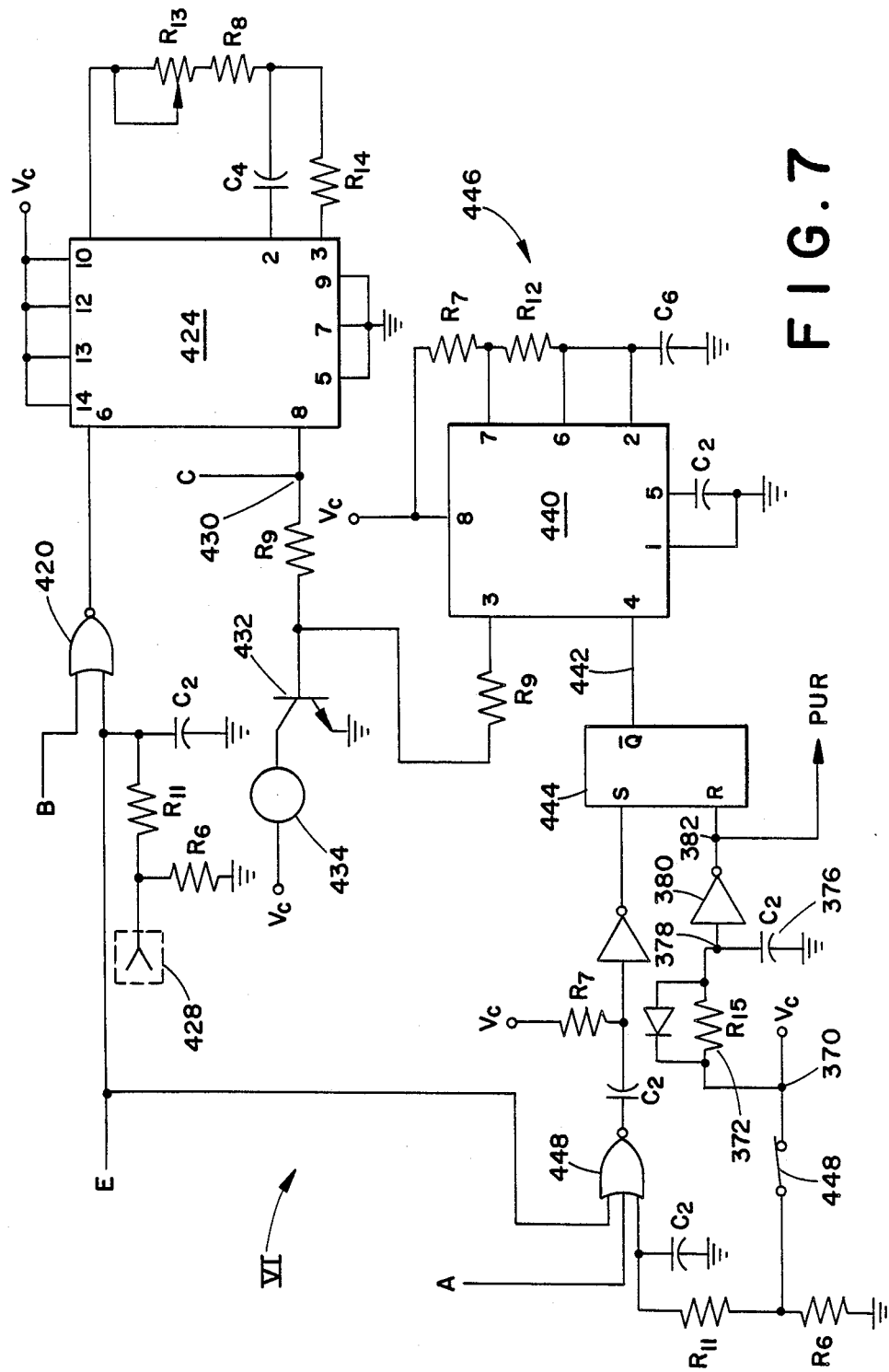


FIG. 7

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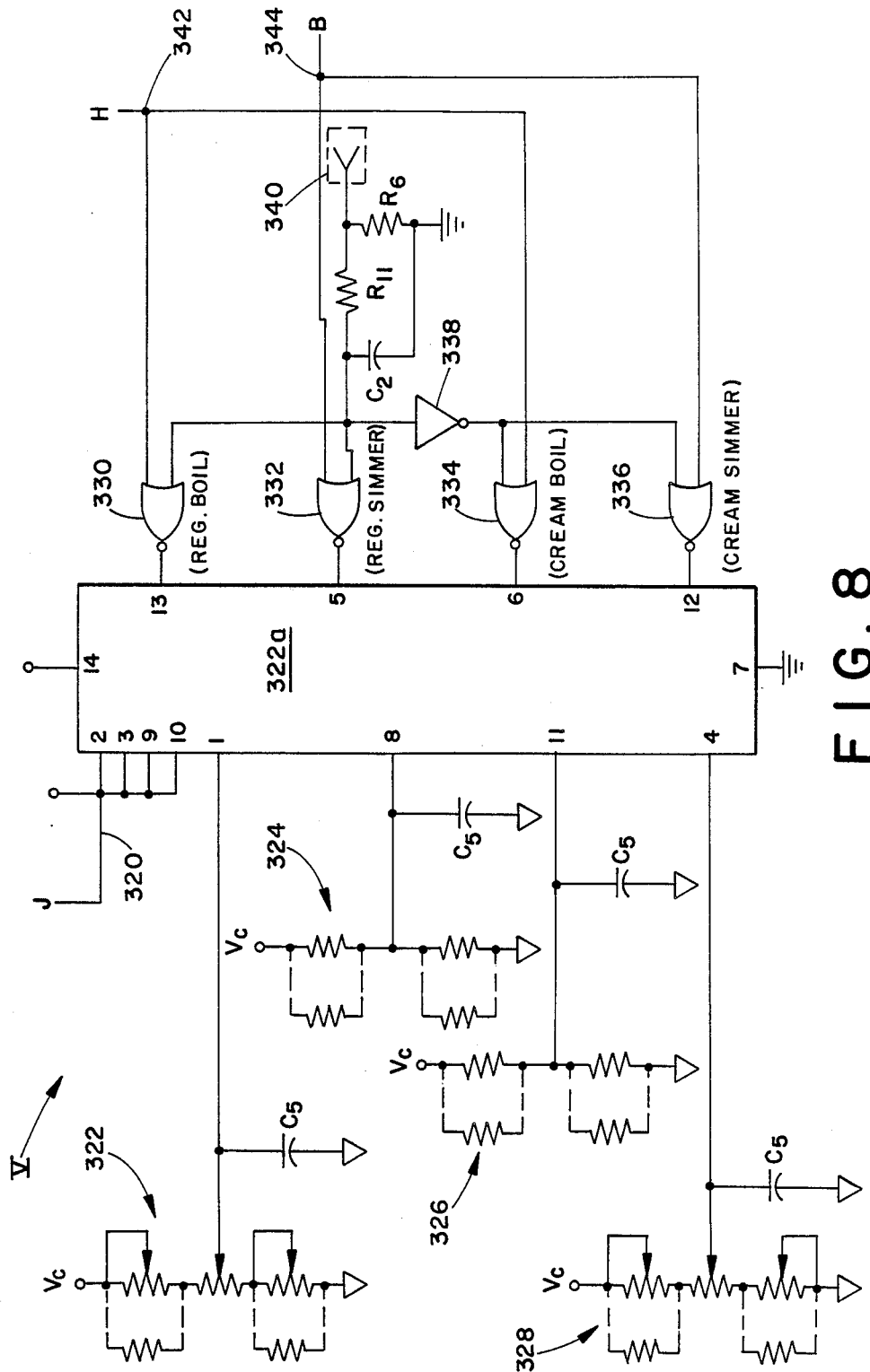


FIG. 8

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COOKING APPARATUS FOR FLUID CONTAINER**BACKGROUND OF THE INVENTION**

This application is a continuation-in-part of copending application Ser. No. 849,780 filed Apr. 9, 1986 now abandoned.

This invention pertains to the art of fluid containers and more particularly to electrically heated soup kettles and cookers and the like.

The invention is particularly applicable to soup kettles having institutional application such as in restaurants, schools, cafeterias, and the like and will be described with particular reference thereto. However, it will be appreciated that the invention has broader applications and may be advantageously employed in other environments and applications.

Soup kettle apparatus have heretofore been comprised of a thick, earthenware pot, jar, or container adapted for operative engagement with a heating element. Oftentimes, the container is of generally cylindrical configuration and is inserted into a concentric housing for continuous heating of the container exterior by the heating element. The heating element is typically controlled by a simplified on/off switch or, alternatively, a high/low switch for supplying high and low power, respectively, to the heating element. In still other soup cooking apparatus, an adjustable electric heating element is incorporated in conjunction with a thermostat for maintaining a predetermined temperature. Soups, stews, and similar food products are placed in the earthenware jar and left to cook over extended periods of time.

Generally speaking, these prior soup kettle apparatus have met with some success but are limited in their cooking capabilities. That is, the soup kettles are designed primarily as a food warmer. Products are first cooked and then transferred hot to the kettle for serving. Therefore, two separate apparatus are required for cooking and serving.

There are, as indicated, cooking apparatus for fluid-type foods such as soup, chili, stew, or the like. These cooking apparatus are also of limited complexity and require frequent tending. For example, if left unattended for an extended period of time, the fluid or food mixture contained therein may be brought to a boil or become overcooked. In an effort to promote more uniform cooking, it is necessary for a user to periodically tend to the food. Occasional stirring or regulation of the heating element in order to promote more uniform cooking enhances the flavor of the food product. If mechanical stirring is provided, such as by a propeller-like mixing blade, a severe problem with abrasiveness and deleterious agitation of the fluid mixture may result.

As is apparent, the prior cooking apparatus are extremely limited in use. Basically, the ingredients are measured and placed in the container and the heating apparatus actuated. Periodic stirring or tending is required to assure uniform cooking of the entire container's contents. Once the cooking time period has expired, the heating assembly is turned off and the food is removed for consumption.

It has been considered desirable to provide a structure which regulates the cooking process in a more efficient and precise manner. Specifically, adjustment of the heating element to prevent overcooking or boiling or, on the other hand, undercooking the food, is desired. Additionally, means for mixing the food in the con-

tainer is desirable so that the food may be left unattended and, be assured of uniform cooking, without doing damage to the mixture.

The subject invention is deemed to meet these needs and overcome the above-noted problems and others in a simple, economical manner.

SUMMARY OF THE INVENTION

The present invention contemplates a new and improved cooking apparatus.

According to the present invention, the apparatus includes a first recessed area adapted to receive a fluid container and including a means for heating the recessed area. Insulating means are provided adjacent the first recessed area to minimize heat loss therefrom. Air is supplied to the associated fluid container for mixing purposes.

According to another aspect of the invention, preheating means are provided for preheating the air prior to introduction into the associated fluid container.

According to a further aspect of the invention, sensing means are disposed in the fluid container for monitoring the temperature therein.

According to yet another aspect of the invention, a processing means controls the heating means and includes timer means for altering the heating means actuation.

The principal advantage of the subject invention is provided in a cooking apparatus that automates the cooking cycle.

A further advantage of the invention resides in the enhanced flavor of the food provided by air injection mixing.

A further advantage is presented by the use of air as a mixing means, whereby deleterious abrasive effects which are resulted from mechanical mixing means are avoided.

Another advantage of the invention resides in the automated monitoring of the fluid temperature and resultant control of the heating apparatus.

Still other advantages and benefits of the invention will become apparent to those skilled in the art upon reading and understanding the following detailed description.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention may take physical form in certain parts and arrangements of parts, a preferred embodiment of which will be described in detail in this specification and illustrated in the accompanying drawings which form a part hereof, and wherein:

FIG. 1 is an elevational, cross-sectional view of the cooking apparatus in accordance with the subject invention.

FIG. 2 is a block diagram of a cooking cycle in accordance with the subject invention;

FIG. 3 is a schematic representation of an electrical circuit in accordance with the cooking cycle of FIG. 2;

FIG. 4 is a block diagram of an alternative cooking cycle of the subject invention;

FIG. 5 is a schematic representation of a portion of a circuit to accomplish the operation represented in FIG. 4;

FIG. 6 is a continuation of the schematic of FIG. 5;

FIG. 7 is a continuation of the schematics of FIGS. 5 and 6; and

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FIG. 8 is a continuation of the schematics of FIGS. 5, 6, and 7.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings wherein the showings are for purposes of illustrating the preferred embodiment of the invention only and not for purposes of limiting same, FIG. 1 shows a cooking apparatus A comprising a main body or base portion B receiving a removable fluid container C therein. Within the fluid container C is illustrated fluid D which may comprise soup, chili, or the like. More specifically, the base portion B includes a housing 10 having a base wall 12 and sidewall 14. The sidewall may be formed from a plurality of distinct wall portions or, in the preferred embodiment, is a generally continuous member of generally cylindrical configuration. An insulation means or lining 16 extends along an interior wall of the housing. The insulation lining has a predetermined thickness in order to retain heat within a central cavity 18 defined by the housing. Various types of insulation may be used as long as they sufficiently inhibit heat transfer outwardly from the housing as will become more apparent hereinbelow.

An insert 22 defines a recessed area in housing 10 and the insert is retainingly held in the cavity 18 defined by the housing. The insert is of generally cylindrical configuration and, in the preferred embodiment, is formed from aluminum or other durable, heat-conductive material. A radially outwardly extending rim portion 24 is defined along the periphery of the insert at its upper end and is designed for mating relation with the sidewall 14 of the housing. The insert is spaced radially inwardly from the insulation lining generally along its axial length so that cavity 18 is generally continuous therebetween. A mounting means 26 is defined at a base wall 28 of the insert and is adapted to fixedly retain the insert in spaced relation from wall 12 of the housing. As shown, the mounting means 26 comprises an elongated, threaded stud 30 extending from the insert, through the insulation lining 16, and outwardly through the housing base wall 12. An appropriate washer and nut assembly 32 cooperates with the threaded stud to retain the insert in a fixed, spaced relation relative to the housing.

A heating means 40 is positioned in the cavity 18 adjacent the base wall 28 of the insert. The heating means is typically an electrically actuated heating element or coil that evenly distributes the heat along base wall 28. A pair of lead lines 42 extend from the heating means for operative connection with a power source such as through male electrical plug 44.

The removable, fluid impervious container C is also of generally cylindrical configuration and adapted for close receipt within the insert 22. The fluid container is normally of stainless steel construction and, as shown, rests in abutting engagement with base wall 28 of the insert. The fluid container is designed to hold soups, chili, or similar food products therein through a predetermined cooking cycle and maintain the food products at a serving temperature. A shroud assembly 46 extends over the insert and housing sidewalls for mating engagement with a peripheral lip portion 48 of the fluid container. The shroud assembly positions the fluid container in concentric relation with the insert and prevents entry of foreign matter therebetween.

A mixing means 54 extends between the base portion B and the fluid container C for mixing the soup retained therein. The mixing means includes a means for com-

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pressing air such as air pump or compressor 56. The air pump is fixedly mounted along the base wall 12 of the housing and, in the preferred embodiment, includes a first flexible tube or passage 58 extending from a pump outlet 60 to a preheating means 62. Though preheating the air is not mandatory, an added advantage of more rapid and uniform soup heating is realized through its implementation.

To effectuate preheating of the air, the preheating means is received in cavity 18 and interposed between the insulation lining 16 and insert 22. Preferably, the preheating means includes an elongated passage or tube 64 formed of copper, brass, or similar heat-conductive material and designed to readily transfer heat from the cavity 18 to the compressed air flowing through passageway 64. A first end 66 of the elongated passage extends outwardly through the housing base wall 12 and operatively receives the other end of flexible tube 58 thereon. A second end 68 of the passageway extends outwardly from the upper portion of housing 10 adjacent the insert rim portion 24. A second flexible tube or passage 70 extends from the passage second end 68 to a probe holder 80.

The holder 80 is centrally disposed in a fluid container lid 82 and is shown in press-fit relation therewith, although other arrangements can be used with equal success. A nipple 84 extends outwardly from one face of the probe holder and is adapted for sealing relation with the flexible tube 70. First and second tubular portions 86, 88 extend from the opposed face of the probe holder and are received through openings 90, 92, respectively, in the container lid. The first tubular portion 86 is aligned with nipple 84 and a passage 94 defined there-through. Further, the tubular portion 86 is received in an elongated central passage 96 disposed on an inner face of the container lid. A pair of spaced seal rings 104, 106 provide a tight, sealing fit between the tubular portion 86 and central passage 96.

The elongated central passage 96 extends from the lid 82 to an area adjacent a bottom portion 108 of the fluid container C. The lower end of central passage 96 defines the outlet for the compressed air supplied by pump 56. As is apparent, mixing means 54, specifically pump 56, compresses filtered air that is emitted at outlet 60, passes through first flexible tube 58, and into the preheating means 62. The tubular passage 64, as indicated above, is formed of a thermally conductive material to warm the air as it passes upwardly to second end 68. The air then continues through second flexible tube 70, through the probe holder passage 94 to elongated central passage 96, and exits along the base of fluid container C.

The central location of the elongated passage outlet is disposed at the bottom of the fluid container to promote better mixing and more uniform cooking of the soup contained therein. The mixing means provides a bubbling action that is dispersed along the base of the container and flows upwardly to the surface of the soup. This bubbling action is similar, in effect, to a slow stirring action.

As illustrated, the bubbling induces fluid flow upward at generally the center of the fluid container C. This provides a generally toroidal flow of the fluid as indicated by the flow line 102. Such a fluid path tends to most uniformly expose all fluid to the effect of heating means 40 during a heating procedure.

A sensing means such as a probe 108 is also received in the probe holder 80 through second tubular portion

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88. A suitable probe means is found in the Series 53-1 and 53-3 thermocouple probes of Fenwal Incorporated of Ashland, Mass. Such probes function to vary a current output to be indicative of a temperature exposure. The probe extends into the soup in the fluid container and monitors the temperature therein. A lead line 110 denotes a path from the probe for operative communication with a control box 112. The control box is mounted on the exterior of the cooking assembly housing 10 and is protected from deleterious effects of the heat by insulation lining 16. The control box includes a control means 120 comprising circuitry adapted to receive input commands and signals and process them for a corresponding predetermined output function. The control means 120 regulates the power supplied through electrical plug 44 and varies the output to lead lines 42 and, subsequently, heating means 40 according to a predetermined program. The probe 108 monitors the temperature of the soup so that adjustments can be made to the power supplied to heating means 40.

According to the control means 120, as represented by the flow chart illustrated in FIG. 2, an on/off switch supplies power to the apparatus. Once the food has been placed in the fluid container which, in turn, is positioned in the cooking apparatus A, a user actuates the on/off switch to supply power thereto as generally represented by step 122. An indicator means such as a light may give ready visual indication that power is being supplied to the apparatus. Preferably, the air pump 56 is actuated in this initial step 122. Once power is supplied, a cycle switch is actuated in step 124 to provide high power to the heating means 40. Typically, the heating means will bring the soup up to a temperature just below boiling.

The probe continuously monitors the soup temperature and provides a feed back signal by which the heating element 40 may be selectively enabled to achieve a preselected temperature. Once a predetermined temperature is reached a first timer is switched on allowing the soup to simmer and cook for a preselected time period, typically at a somewhat lower temperature 126. After cooking for the duration of the timer, the high power is shut off as indicated by block 128. Once the timing means has expired, an indicator means such as a horn or light can signal that the cooking cycle is over if desired. A manual shutoff may be performed as indicated by block 132, after which time the cycle may be recommended.

Once the power is actuated to the apparatus, the air pump 56 is actuated and continually mixes the fluid or soup D in the fluid container C. Therefore, as described above, a more uniform cooking of the soup is attained which, in turn, provides a more flavorful soup. The probe 108 continually monitors the soup temperature and the control means 120 makes the needed adjustments to the heating means 40 as required.

Turning now to FIG. 3, an electronic circuit for accomplishing the above soup cooking process will be described. The control circuit 140 has power input lines 142 and 144 at complementary voltage potentials. For ease of illustration, in the description below, coils for relays will be assigned a reference numeral, and a corresponding contact pairs of the coil will be assigned a letter subscript to the coil numeral. The operation of the timer circuit is commenced by closing switch 146. At this time, a circuit will be completed through indicating means such as pilot light 148. Pilot light 148 will remain actuated as long as the circuit 140 is enabled, that is, as

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long as switch 146 is in a conducting position. At the closing of switch 146, power is presented to a power supply 152 for a thermostatic control 180, the operation of which will be described below. Switch 146 also commences operation of the mixing means 54 (FIG. 1), which is illustrated as an air pump 56. An air pump indicator pilot 154 may provide an indicator of the activation of the pump. A fuse 156 is preferably provided as a safety device in the event of a short circuit during the activation of the circuit 140.

A cooking cycle is activated by depression of normally-opened switch 150 which is depicted as a push button type switch. Of course, comparable switches can be used with equal success without departing from the scope and intent of the subject invention. Actuation of the switch 150 supplies power to relay coil 160 (see 122, FIG. 2), thereby causing contacts 160a, 160b, and 160c to close. Electrical conduction through the contacts 160a maintains power to the coil 160 after the switch 150 is released. Conduction through contacts 160b causes thermostatic control indicator, such as pilot lamp 170, to be activated. Electrical conduction through contacts 160c provides power to normally-closed contact 172 of thermostatic control 180. The thermostatic control 180 may be comprised of a control such as a Fenwal series 544 thermocouple sensing temperature controller. The control 180 derives its operation power from the aforementioned power supply 152. Such a device incorporates a means for monitoring the output of a sensor such as probe 108, and to provide a control in accordance with the temperature thereat. The control 180 is adapted to function in conjunction with a variable resistor or potentiometer, the setting of which determines the maintained heat level.

When the thermostatic control 180 is in the closed position indicated at 172, a current path is present to a contactor coil 200. Energizing the coil 200, closes contacts 200a and 200b, thereby supplying power to a high heat unit which comprises a portion of heating means 40 (FIG. 1). The high heat unit 206 preferably is disposed below the removable fluid container C for heating the soup in accordance with the above-description. The high heat unit 206 has sufficient wattage to heat the soup at a rate of approximately 3° F. per minute. Upon reaching a preselected temperature, preferably just prior to the boiling point of the soup, which is generally assumed to be approximately 212° F., thermostatic control 180 switches from its closed position 172 to its open position indicated at 182. If the cooker is sufficiently well insulated, it may be desirable to terminate the high heat substantially prior to the boiling point, in that the temperature may continue to rise from residual heat in the coils and the cooker itself. A potentiometer 208 is provided in conjunction with thermostatic control 180 to allow for varying the temperature at which the state of the thermostatic control will change from its normally closed position at 172, to its normally open position at 182. Such an ability is desirable when the boiling point of the soup is varied due to such conditions as the altitude of the cooker, or the contents of the soup being prepared. The thermostatic control functions to compare signals received from the probe 108 (FIG. 1) to the setting of potentiometer 208.

When the thermostatic control 180 switches from its closed position 172 to its open position indicated at 182, a current path is completed to relay coil 220. At this time the contacts 220a are open, removing power from high heat contactor coil 200 thereby opening contacts

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200a and 200b. The contacts 220b are also closed, thereby sustaining power to the coil 220. Contacts 220c are also opened, which removes power from the coil 160. Deactivation of the relay coil 160, removes power from the pilot light 170, by the opening of contacts 160b, and the thermostatic control 180 by the opening of contacts 160c. The entire high heat portion of the circuit is thereby disenabled.

The current path through contacts 220b supply power to a time delay relay coil 224, which is well known in the art. The time delay relay coil 224 functions to maintain its initial state for a preselected duration. While in its initial state, contacts 224a are closed, thereby supplying power to a low heat unit 232. The wattage of the low heat unit 232 is chosen so as to maintain the soup at a temperature generally 3° to 5° F. below the boiling point.

After the tolling of the preselected duration of the time delay relay 224, the contacts 224a open, thereby removing power to the low heat unit 232. At this time, contacts 224b are closed, supplying power to a relay coil 236. Energizing the coil 236 closes contacts 236a, which thereby sustain power to the coil 236. At this time also, contacts 236b are closed supplying power to an alarm, such as an audible signal which is generally indicated at 238. Contacts 236c are opened removing power to the entire low heat portion of circuit 140. The alarm will continue to be activated until the switch 146 is opened, at which time the control circuit 140 is read for recommencement of the above-described cycle.

The alternative control circuitry illustrated in FIGS. 5 through 8 allows for improved cooking performance and a resultant, better tasting and more uniform product. Turning to FIG. 4, a flow chart is presented which demonstrates a modified cooking process, which, in conjunction with a cooker formed in accordance with the subject invention presents more desirable results.

FIG. 4 includes a power up cycle, generally indicated at E; a cooking cycle, generally indicated at F; and a holding cycle, generally indicated at G. Placing power on to the cooking control of FIG. 4 places the cooking apparatus in a power on state indicated as block 231. From this state, the mixing means, which may be an air pump as indicated by block 233, may be selectively activated or deactivated. The power on state also places the control circuitry of FIG. 4 in a standby mode as indicated at block 235. From this point a cooking cycle F, or a holding cycle G, may be commenced.

Commencement of the cooking cycle F, begins heating of fluid in the container C (FIG. 1), as indicated by block 236. At this point, fluid is heated to at or or just below, a preselected boiling temperature which is set as indicated generally at block 239. Upon reaching this preselected temperature, the control cycle enters the phase indicated at block 240, where the applied heat is dropped to a achieve lower, simmer temperature in the fluid, which has been selected at 242. At this stage, a lower heat simmer period is maintained at 248, during which time the temperature of the fluid is continually monitored, and a heating element selectively engaged or disengaged to maintain generally the constant simmer temperature. The low heat level is achieved by turning the heating element on and off at generally uniform intervals. Thus, the simmer cycle includes two means by which the heating element may be selectively engaged and disengaged, as will be further described below.

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The simmer period extends for a preselected time, which has been set at the block indicated at 250. After the tolling of the preselected simmer time, during which the temperature has been monitored and a heating means operating at a lower heat level has been selectively engaged to generally maintain the uniform simmer temperature, the heating element is turned off as indicated at block 252, and a signal, such as an audible signal as indicated at block 254 is given. From this state, an operator has the option of recommencing a cooking cycle by again taking the control to the point indicated at block 236, or again placing the control in a standby mode as indicated by block 235.

When in the standby mode of block 234, an operator has the option of holding the contents of the apparatus at a holding temperature, which is indicated generally at block 260. The holding temperature is preselected as indicated at 262. The preselected holding temperature at 262 is compared to a monitored temperature of the fluid and the heating element is selectively engaged or disengaged to maintain generally the preselected holding temperature. The holding temperature by be maintained indefinitely, as long as power remains to the system, until the operator again selects to place the apparatus in the standby mode 235.

Turning now to FIGS. 5-8, a circuit for accomplishing the functions indicated at FIG. 4 will be described. Turning particularly to FIG. 5, a power supply I receives ac power at its terminals 280, through a fuse, and subsequently a power supply, the operation of which is well understood in the art. Two voltages are provided from the power supply I. A V_{bulk} is provided, generally in the range of 9-12 volts. A second voltage, V_c , is provided generally at 5 volts, set by the voltage regulator 284. The level of V_c is that which is generally desirable for powering integrated circuits of the TTL variety, or the like, although it is to be appreciated that for various integrated circuit types such as CMOS, varying power levels of V_c may be desired. Two ground levels are indicated, with a common ground indicated by the symbol illustrated at 290, and an analog ground illustrated by the symbol at 292. The analog ground is isolated from the common ground to eliminate action of sensitive components which may react to transients should one ground be used for both.

A pump mechanism is indicated generally at II where a mixing means or pump 286 is activated by a relay/starter 288.

A heater control circuit is indicated generally at III and includes an optically isolated triac driver 300 which is controlled by a control means 302. A suitable triac driver is a common component such as a model M03030. Activation of control means 302, which is shown as a transistor darlington pair, enables an LED contained within the triac driver 300, thereby engaging a thyristor therein. Corresponding circuitry thereby engages a triac 304, activation of which enables heater coil 306 which is preferably comprised of a 1800 watt heating element. Selectively supplying power to a base of transistor 302 will selectively engage or disengage heater coil 306. Therefore, the application of heat to the fluid in the container C may be regulated to achieve a desired average temperature, by controlling the running period of the coil 306.

Turning now to block IV, circuitry is provided which functions as a thermocouple monitor. The integrated circuit 310 is a monolithic thermocouple amplifier, the pin outs of which are numbered in accordance

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with a common circuit designation AD594. Integrated circuit 310 is a complete instrumentation amplifier and thermocouple with cold junction compensation. It functions to combine an ice point reference with a precalibrated amplifier to produce a high level (10 mV/°C.) output directly from a thermocouple signal. The integrated circuit 310 also includes a failure alarm that indicates if one or both thermocouple leads become open. The thermocouple probe is placed across terminals 312.

A failure or fault such as a broken thermocouple causes a signal at pin 12 of integrated circuit 310, and results in the engaging of a fault indicator 314, which is shown as a light emitting diode (LED).

An output at pin 9 bears generally one of two states, dependent upon whether a temperature at the probe is above or below a preselected set point. More precisely, a temperature control signal at 316 is low when a monitored temperature of the probes is below a preselected set point, and the temperature control signal at 316 is high when the monitor temperature at the probes is greater than a preselected set point. The set point is determined by an input at pin 8 of integrated circuit 310, the obtaining of which will be described below.

Turning now to FIG. 8, the means V_c for generating the above-noted set point will be described. The preset set point indicated above is generated at line 320. The integrated circuit 322 bears corresponding pin outs for a quad analog switch/quadmultiplexer, such as an MC 14001 BCP, as is commonly known in the art. Pins 2, 3, 9, and 10 form outputs for a plurality of four respective analog switch/quadmultiplexers. In this instance, all outputs thereof are ORed together so that a signal at either output generates a corresponding signal at 320. Pins 1, 4, 8, and 11 are switched inputs corresponding to the outputs 2, 3, 9, and 10 respectively. Control signals are provided at pins 13, 5, 6, and 12 in the same order. For example, a signal placed at pin 13 will correspondingly engage pins 1 and 2.

A plurality of variable resistor networks 322, 324, 326 and 328 govern the preselected set point temperature with which the probe inputs may be compared, as indicated by block 5 of FIG. 4, and as illustrated above. Resistor network 322 dictates a set point for a regular boil sequence. Resistor network 324 dictates a set point for a cream boil sequence; cooking parameters being variant for cooking of cream base soups. Resistor network 326 dictates a set point for a cream simmer sequence. And, resistor network 328 dictates a set point for a regular simmer sequence. Hence, a signal placed at the output of NOR gate 330 enables a set point for a regular boil temperature to be maintained, a signal at the output of NOR gate 332 enables a set point for a regular simmer temperature to be maintained, a signal at the output NOR gate 334 enables a set point for a cream boil temperature to be maintained, and an output at NOR gate 336 enables a set point for a cream simmer temperature to be maintained.

NOR gates 330, 332, 334, and 336 will have an output thereon only at which time both inputs of any one thereof are at a low or zero state. It may be noted that the regular boil and simmer NOR gates 330 and 332 have one input thereof at an opposite state to corresponding inputs to NOR gates 334 and 336, as dictated by the operation of inverter 338. A V_c signal at connector 340 will therefore dictate whether a cream cycle or a regular cycle is to be implemented. The connector 340

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is engaged to a cream soup selector switch which will be tied to V_c to select cream soup parameters.

The remaining inputs for NOR gates 330 and 334 are commonly connected to a point 342 a signal at which enables a boil cycle, either cream or regular to occur. Similarly, the remaining NOR gates 332 and 336 share a common connection at point 334, a signal at which enables a simmer cycle to progress. These signals at 342 and 344 will be obtained as further described below.

Turning now to FIGS. 5, 6, and 7, operation of a sequence and timing control VI will be described. Turning particularly to FIG. 7, an apparatus for providing a power up reset signal ("PUR") is provided. Upon commencement of power to the circuit by throwing of switch 294 (FIG. 5) voltage, V_c is present at point 370. A transient voltage is therefore placed across resistor 372 which has diode 374 parallel therewith, and finally through capacitor 376, which is preferably valued at generally 0.1 mfd. Commencement of voltage at 370, thereby would initially place a value of ground level at point 378, with this level rising to V_c as capacitor 376 is charged. An inverter 380 has its input tied to point 378 and its output tied to a power up reset point 382. A signal upon power up is therefore present at point 382 which is high for a short period of time after power up the time for which the signal is high is approximately 0.5 m/sec. to 1 m/sec. After this time a voltage level at 382 is at low or at ground state.

Turning particularly now to FIG. 6, the operation of the control portion of circuit VI will be described. The above-described power up reset pulse forms one input to NOR gate 390. The pulse functions to set an output of NOR gate 390 at its low or ground state. Commencement of power to the circuit also causes a reset input 394 of flip-flop 396, causing 396 to enter its off (Q low) state.

Commencement of a cooking cycle is undertaken by depression of a cycle start switch 400 which is depicted as a normally open push button switch. Depression of the cycle start switch 400 causes the flip-flop 396 to be set, and a corresponding high output to be placed at 402.

Turning to FIG. 5, it will be seen that a high signal at point 402 activates transistor 404, which in turn enables a boil cycle indicator 406, depicted as a light emitting diode. The voltage at 402 further enables the darlington pair control means 302, the operation of which has been described above, thus enabling the heater coil 306. Full power of the heating coil 306 is maintained until a preselected temperature has been reached, and the temperature control signal 316 of FIG. 5 becomes high as described above. At this time, a signal is placed into NOR gate 410, which sets NOR gate 412 and commences operation of a simmer cycle.

A simmer cycle may be commenced, as shown above, by a signal present at point 316. Alternatively, the simmer cycle may be immediately commenced by depression of a simmer control switch 414, which is depicted as a normally open push button switch. Depression of the switch 414 causes a high signal to one additional input of NOR gate 410, hence supplying a signal to force the output of NOR gate 412 to a low state, and correspondingly, the output of NOR gate 390 to its high state. The output of NOR gate 390, when high, activates a transistor 416 which in turn activates a simmer cycle indicator 418 which is shown to by a light emitting diode. The heat level of the heater coil 306 is lowered during the simmer cycle as will be further described below.

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When the output of NOR gate 390 goes high, a reset pulse is placed into flip-flop 396 at point 394, thereby causing output 342 of flip-flop 396 to enter its low or off state.

Turning now to FIG. 8, it will be seen that a signal at point 342 forms an input to boil NOR gates 330 and 334. The presence of a high signal at 342 thereby disengages operation of the boil NOR gates and commences operation of the simmer NOR gates.

Returning to FIGS. 6 and 7, it will be seen that when an output at NOR gate 390 become high during a simmer sequence, the corresponding output of NOR gate 412 goes low. Turning specifically to FIG. 7, it will be seen that both outputs to OR gate 420 are low, and hence the output of OR gate 420 become low. The output of OR gate 420 forms an input for a simmer timer integrated circuit 424, the pinouts of which are numbered in accordance with a common programable timer MC 14066 BCP. The presence of a low signal at master reset pin 6, allows the timer 424 to commence tolling. Therefore, while the boiling cycle was activated, a high output was present on flip-flop 412 (FIG. 6) and correspondingly, a high signal was placed at pin 6 of timer 424, thereby maintaining the timer 424 in its reset position until completion of the boiling cycle. A reheat cycle may alternatively be commenced by placing of a voltage signal, V_c , at connector point 428. The presence of a signal at this point will momentarily cause the OR gate 420 to have a high signal at the output thereof, thereby resetting timer 424. The simmer time is determined by varying the values of a R/C Network 430.

After completion of the simmer period, a high signal is present at point 430, which is located at pin 8 of timer 424. The signal at point 430 activates transistor 432, which activates an indicator 434, which may comprise an audible signal device. The indicator 434 indicates a completed cooking cycle.

A signal at point 430 also forms an input to alarm beep timer 440, the numbering of which corresponds to a common 555 timer integrated circuit which is wired as an astable multivibrator. Specifically, the signal at 430 is connected to output pin 3 of alarm beep timer 440. As long as a low state is present at voltage point 442 which forms the inverted (Q-bar) output of flip-flop 444, the voltage level at output pin 3 of alarm beep timer 440 will alternate between a high and low state, thereby selectively engaging and disengaging transistor 432 and correspondingly, indicator 434. Therefore, until flip-flop 444 is set, the indicator 434 will continue to be turned on and off as the alarm beep timer 440 is wired in a continuous running mode. The on versus off time for the astable beep timer 440 is dictated by selection of appropriate values of R/C network 446.

The set signal for flip-flop 444 is provided by an output of a three input NOR gate 448, the output of which will be high only when all three inputs thereto are low, as will occur when a reheat signal is not present at connector 128, the cycle start switch is in its open position, and when the pump 286 (FIG. 5) is activated, at which time the switch 448 will be opened.

Turning particularly to FIGS. 6 and 7, the operation of a low power control circuit VII implemented in the simmer cycle will be explained. A low power control timer 460 is comprised of a 555 timer integrated circuit. The low power controller 460 is wired in an astable or free running mode, the on versus off time of which is dictated by an R/C network indicated generally at 462. The low power control 460 is disabled by the pres-

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ence of a high signal at the reset pin 4 thereof. The input to the reset pin is provided by a three input NOR gate 462. The output of the NOR gate 462 will be low unless all input lines thereto are in their low or off states. This will occur only when the output at voltage point 430 of simmer timer 424 (FIG. 7) is low, indicating that the simmer cycle has not yet been completed; the flip-flop 412 is in its off state, indicating that the boil cycle has been completed; and the temperature control signal 316 from the monolithic thermocouple amplifier 310 (FIG. 5) is in its low state indicating that the monitored temperature at the thermocouple probe is below the preselected value dictated by an appropriate resistor network 326 and 328, dependent upon whether a regular simmer or cream simmer cycle is selected. When these inputs are all low, the reset to the low power control 460 is disabled, thereby supplying an alternating high and low signal at pin 3 thereof, as indicated at point 464. The voltage level at voltage point 464 will selectively engage or disengage the darlington pair control means 302, the operation of which has been described above.

It may therefore be seen that during the simmer cycle, the heater coil 306 (FIG. 5) is selectively engaged and disengaged at generally regular intervals dictated by the period of the low power control 460 running as an astable multi-vibrator. This is in addition to the selective engagement dictated by the cycle timing circuit.

Suitable values for the resistors and capacitors of FIGS. 5 through 8 appear in the following table:

Resistances (ohms)		Capacitances (microfarads)	
R1	6.8	C1	410 pf
R2	82	C2	.01
R3	100	C3	.1
R4	180	C4	.2
R5	220	C5	.22
R6	1K	C6	4.7
R7	10K	C7	330
R8	12K		
R9	22K		
R10	36K		
R11	100K		
R12	150K		
R13	250K		
R14	270K		
R15	560K		
R16	20 M		

The invention has been described with reference to the preferred embodiment. Obviously modifications and alterations will occur to others upon reading and understanding of the specification. It is intended to include all such modifications and alterations insofar as they come within the scope of the appended claims or the equivalents thereof.

Having thus described the invention, it is now claimed:

1. A cooking apparatus for cooking soup comprising:
 - means for defining a selected boiling temperature of the soup;
 - means for generating a boiling signal representative of the selected boiling temperature;
 - means for defining a selected simmer temperature of the soup;
 - means for generating a simmer signal representative of the selected simmer temperature;
 - means for monitoring a temperature of the soup;
 - means for generating a temperature signal representative of the monitored soup temperature;

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a timer means for generating a timing signal indicative of the tolling of a preselected simmer time period;

means for generating a control signal in accordance with the boiling signal, the simmer signal and the temperature signal;

means for selectively controlling application of heat to the soup in accordance with the control signal; and

means for terminating the simmer period in accordance with the timing signal.

2. The cooking apparatus of claim 1 further comprising means for varying the simmer time period.

3. The cooking apparatus of claim 1, wherein a simmer period is defined in accordance with the simmer signal and the timing signal.

4. The cooking apparatus of claim 3 wherein the boiling temperature is set to a temperature just below the boiling point thereof.

5. The cooking apparatus of claim 2 further comprising means for defining a holding temperature, means for generating a holding signal indicative of the holding temperature, and means for selectively controlling application of heat to the soup in accordance with the holding signal.

6. The cooking apparatus of claim 3 further comprising a means for commencing operation of a cooking cycle.

7. The cooking apparatus of claim 6 further comprising means for selectively mixing the soup in an associated container.

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8. The cooking apparatus of claim 7 wherein said mixing means is comprised of an air pump.

9. The cooking apparatus of claim 8 further comprising means for preheating pumped air prior to exposure to the soup.

10. The cooking apparatus of claim 6 further comprising a means for generating an audible signal after completion of the cooking cycle.

11. The cooking apparatus of claim 10 further comprising means for recommencing the cooking cycle after activation of the audible signal.

12. A cooking apparatus for cooking soup comprising:

means for monitoring a temperature of the soup;

means for generating a temperature signal indicative of a monitored temperature;

means for generating a cooking signal indicative of a cooking temperature;

means for generating a simmer signal indicative of a simmer temperature;

means for generating a timing signal; and

means for selectively controlled application of heat to the soup in accordance with the temperature signal, the cooking signal, the simmer signal and the timing signal.

13. The cooking apparatus of claim 12 further comprising means for selectively controlling application of heat to the soup to maintain a generally constant simmer temperature.

14. The cooking apparatus of claim 13 further comprising a means for generating an audible signal in relation to the signals.

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EXHIBIT D

United States Patent [19]

Scott

[11] **3,806,701**[45] **Apr. 23, 1974**[54] **ELECTRIC COOKING UTENSIL HAVING
A REMOVABLE VESSEL**[75] Inventor: **Robert J. Scott**, Blue Springs, Mo.[73] Assignee: **Rival Manufacturing Company**,
Kansas City, Mo.[22] Filed: **Nov. 3, 1972**[21] Appl. No.: **303,479**[52] U.S. Cl. **219/438, 219/386, 219/436,**
219/543[51] Int. Cl. **F27d 11/02**[58] Field of Search 219/385, 386, 387, 421,
219/432, 433, 436, 438, 439, 464, 521, 543;
13/25[56] **References Cited****UNITED STATES PATENTS**

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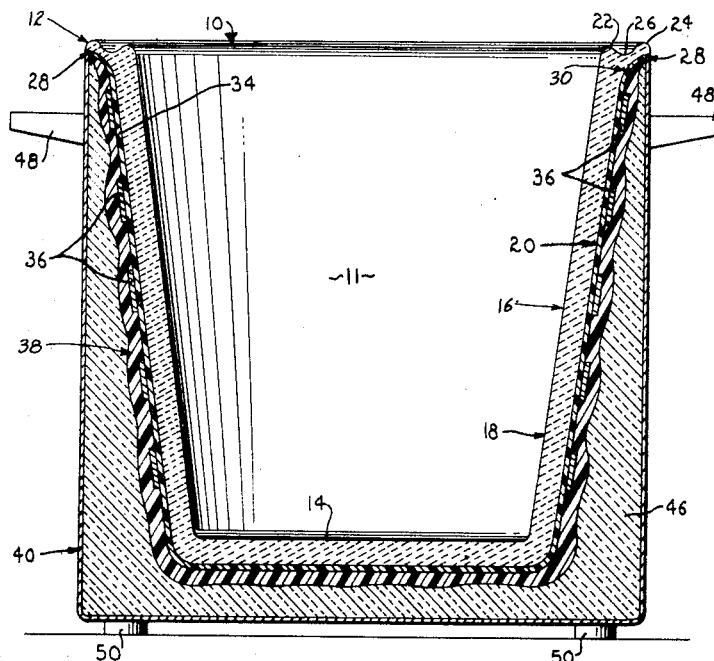
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Primary Examiner—Volodymyr Y. Mayewsky

[57] **ABSTRACT**

An electric ceramic utensil is used to provide heat to a potentially electrically conducting foodstuff contained within the ceramic utensil. The utensil has a bottom and wall of refractive material forming a cup-shaped vessel for holding the foodstuff. The bottom and wall have a first side facing into the vessel and a second side facing externally of the vessel. The second side is unglazed and a thermal conductive, electric resistive material is combined with the second side of the wall and bottom to form an impervious coat thereon. An electric resistance heater is spiralled around the wall of the vessel to provide the heat necessary for cooking the foodstuff. A second electric resistive material is used to coat the first material and the resistance heater to provide an electrically insulated coat about the heater. A container is provided externally of the bottom and wall of the cooking utensil to support the vessel. Insulation extends between the second material and wall of the container so that the vessel may be handled while the foodstuff is being heated.

3 Claims, 3 Drawing Figures

PATENTED APR 23 1974

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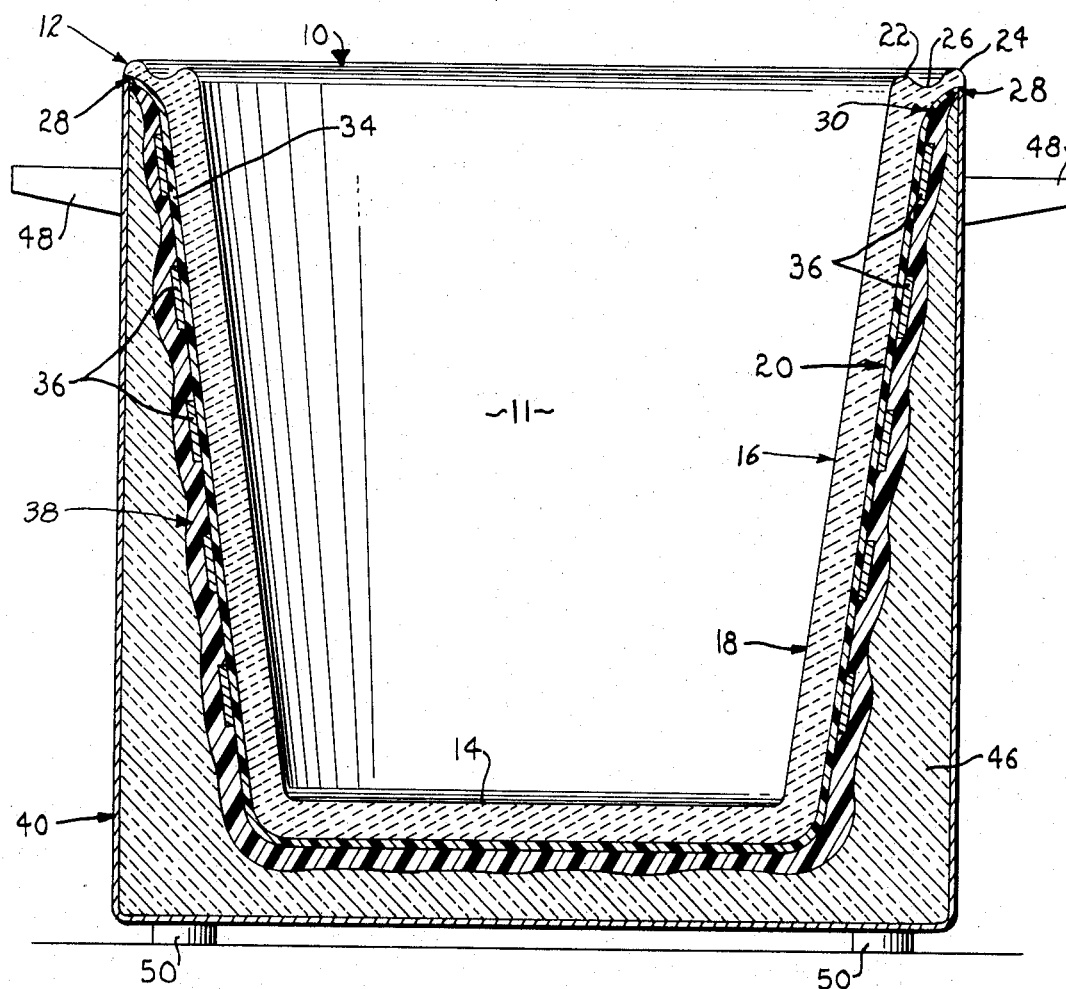


Fig. 1.

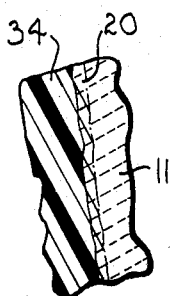


Fig. 2.

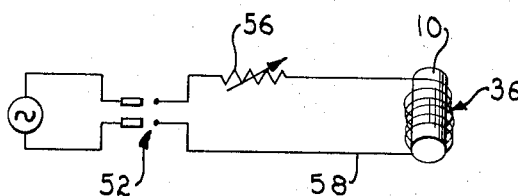


Fig. 3.

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ELECTRIC COOKING UTENSIL HAVING A REMOVABLE VESSEL

BACKGROUND AND BRIEF DESCRIPTION OF THE INVENTION

It is well known to wrap an electric heater around the outside of a vessel for providing heat to partially liquid foodstuff, such as baked beans and soups. In normal construction, the earthenware or ceramic vessel is glazed on the inside of the vessel to provide an impervious coating for preventing the passage of the liquid material therethrough. Usually, this coating is on the side of the earthenware that faces into the vessel, thus prohibiting the flow of electricity from the electric heater, along the electrically conductive foodstuff into the vessel, and possibly to the user of the utensil. However, this construction has a very undesirable characteristic, namely that of the coat being constructed from the refractory material from which the ceramic vessel is constructed. A refractory material is brittle, a sharp rap to the glazed coating could fracture the refractory material and the coating, thus allowing passage of the electrically conducting substance into contact with the electric heater. Further, since a substantial number of users of electric cooking utensils stir the contents of the vessel with a metal spoon or ladle, a possibility always exists that the user will fracture or chip the glaze coating with the stirring utensil. Also the coating may be fractured by jarring the vessel through normal usage, as when the crock is washed or when placing it in storage. Additionally, thermal shock can easily fracture the coating through thermal expansion and contraction. If for the above or any other reason, the coating is fractured the refractory material will permit a passage of the electrical conductive liquid food substance into contact with the electric heating element and possibly produce an electrical shock to the user who contacts the food in the vessel.

It is one of the primary objects of this invention to provide a uniquely constructed apparatus that is electrically insulated from a potentially electrically conductive substance being heated within an electric cooking utensil including a vessel constructed of crockery or earthenware material.

A further object of the invention is to provide a cooking utensil having a thermal conductive, electric resistive material on the outside edge of the refractory material forming a vessel wall. Further it is significant that the vessel wall is resistant to cracking should the vessel be struck by a relatively substantial force on the inside edge of the vessel wall.

A further object of the invention is to provide in a vessel of the character described, a thermal conductive, electric resistive material on the outside edge of a vessel bottom for providing a seal externally of the refractory material to insure that the potentially electrically conductive food stuff is held within the vessel while cooking or warming.

Another object of this invention is to provide a cooking or warming utensil having a second electric resistive material adhering to a first thermal conductive, electric resistive material and to a heating element wrapped about the cup-shaped vessel of the utensil thereby providing a seal around the heating element for allowing

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total emersion of the vessel construction for cleaning and washing purposes.

A further object of this invention is to provide an electric ceramic vessel having a thermal insulated container about the exterior of same to provide for support in handling the vessel when the vessel is being used to heat a substance there within.

These and other objects of the invention, together with the features of novelty appurtenant thereto, will appear in the course of the following description.

DETAILED DESCRIPTION OF THE INVENTION

In the accompanying drawings which form a part of this specification and are to be read in conjunction therewith and in which like reference numerals are employed to indicate like parts in various views:

FIG. 1 is a front vertical, sectional view of the utensil construction, showing the relationship between the separate elements of the invention;

FIG. 2 is an enlarged vertical, sectional view showing the cohesion between the refractory material and the first thermal conductive, electric resistive material; and

FIG. 3 is a schematic diagram illustrating the relationship between the electrical apparatus employed within the utensil structure and a power supply.

Referring now to the drawing, and more particularly to FIG. 1 thereof, a cooking utensil 10 has a cup-shaped vessel portion 11 and a lip portion 12. It is contemplated that the vessel will be constructed of a lightweight ceramic material that is thermal conductive, such as earthenware or stoneware. The vessel 11 is formed by bottom 14 and upwardly diverging wall 16. Bottom 14 and wall 16 have an inner side 18 (usually glazed) facing into vessel 11 and exterior second side 20. As illustrated, the thickness of bottom 14 and sidewall 16 (distance between inner side 18 and exterior side 20) is usually maintained constant within vessel 11. The exterior side 20 will be unglazed and, as will be seen, accommodates and supports the electrical mating elements and the resin varnish.

Lip 12 of vessel 11 has an inside ridge 22 and a higher outside concentric ridge 24 with a valley 26 located therebetween. This ridged lip construction facilitates the placing of a cover over the food substance within vessel 11 as same is being cooked or warmed.

The outer and under portion of lip 12 has a smooth arcuate contour as indicated by the numeral 30. For ease of construction, vessel 11 will be formed such that the ceramic material is provided with a smooth and continuous surface, except for junction edge 28, to substantially eliminate possible thermal stresses within the ceramic material.

As suggested above, the exterior wall 20 of the vessel 11 is unglazed. A silicone varnish will be applied to the entire exterior from junction edge 28 downwardly including the bottom of the vessel 11 and will be absorbed by the ceramic refractory material. The silicone varnish is of the type that is thermally conductive to allow heat passage when heat is applied to the vessel by the electric heater elements 36. Additionally, the silicone varnish will waterproof the exterior surface of vessel 11 and, since the silicone varnish actually penetrates into the unglazed surface of the ceramic material, minute cracks and chipped areas will likewise be waterproof. The silicone material builds up to a predetermined thickness on the exterior of the ceramic mate-

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rial to thereby form an electrical barrier against any leakage current from the heating elements and also operates to hold the heating elements 36 in the proper location. Further, since the coating, when hardened, is elastic in nature it is extremely resistant to fracture and it is unlikely to be chipped as it is fully encapsulated or otherwise protected from direct and damaging blows.

The heating element mentioned above will be comprised of a plurality of electrical resistor elements 36 and will be wrapped in a spiral fashion around the exterior wall 20 of vessel 11 and on the outside of the silicone varnish 34. It is contemplated that the size, number and shape of the heating elements may be varied in accordance with the size of the vessel construction.

A second coat of silicon varnish 38 will be applied to the exterior of first coat 34 into the exterior of the heating elements 36. For convenience of illustration, the second coat has been shown and indicated as being substantially similar to the silicone varnish applied directly to the exterior surface of the vessel itself. However, it is really only necessary that the second coat be electrically resistant and does not necessarily have to be thermally conductive. Actually, if the type of later described insulating material that surrounds the exterior of the heating elements is suitably chosen, it is possible to eliminate the second application of the silicone varnish. However in the preferred embodiment, utilization of the second coat of silicone varnish further insulates the electrical heating elements and eliminates potentially harmful shocks, and helps hold the heating elements 36 in place.

The vessel 11 is supported in a plastic container 40 that is essentially cylindrical in shape with feet 50 located on the bottom portion thereof. It is contemplated that the container diameter will be of such that the upper peripheral edge of the container will contact and bear against the substantial flat underportion of the lip 12 (diagrammatically indicated by the numeral 28). An insulating material 46 will be inserted inside of container 40 and will fill the space between the exterior of vessel 11 and the interior of the container 40. This insulating material will have the necessary properties of prohibiting the transfer of heat away from vessel 11. Further, the heat insulating properties of material 46 will enable a user to grasp the handles 48 (which extend outwardly from container 40 as shown in FIG. 1) without a danger of being burned.

It is contemplated that the insulating material 46 will be poured or otherwise formed of a suitable contour during the construction of the entire cooking utensil and will provide a suitable receptacle to receive the vessel with the varnish coating on the exterior so as to substantially support the weight of the pot and to eliminate some of the dynamic loading from the side of the container 40. Further, it is possible to cause the insulating material to adhere directly to the exterior of the vessel thereby precluding the vessel from being removed from the container. Alternatively of course, the insulating material can be integrally formed with the housing with the vessel removable for cleaning purposes and the like. However, with the present structure both vessel and container may be placed with water and washed without fear of damage to the electrical heating components.

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In operation, electrical resistant heating element 36 is interconnected to a conventional wall outlet by plug 52 through rheostat 56. Current through conductors 58 heats the heating elements 36 and eventually vessel 11 by conducting the heat from elements 36 through the coating 34 and into the ceramic material. Rheostat 56 controls the amount of heat that is being emitted from the elements 36, and as such may vary the operation of the vessel from a "warmer" or slow cooker to faster cooking temperatures.

From the foregoing, it will be seen that this invention is one well adapted to attain all the ends and objects herein set forth, together with other advantages which are obvious and which are inherent to the structure.

It will be understood that certain features and sub-combinations are of utility and may be employed without reference to other features and subcombinations. This is contemplated by and is within the scope of the claims.

As many possible embodiments may be made of the invention without departing from the scope thereof, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim:

1. An electric cooking utensil comprising a cup shaped vessel, said vessel being comprised of ceramic or earthenware material and having an exterior surface, a thin electric heating element, said electric heating element being wrapped and attached adjacent the exterior surface of said vessel and operable to heat said vessel and its contents when an electric current is applied thereto, a container for locating and thermally and electrically insulating said vessel and said electric heating element, electrical conductor means for applying said electric current to said electric heating element, and a first electrically non-conductive coating applied to said exterior of said vessel, said coating waterproofing said vessel and being located between said electric heating element said exterior surface, said exterior surface of said vessel having at least a portion thereof that is unglazed, said first electrically non-conducting coating having at least a portion thereof that is absorbed interiorly of said unglazed exterior surface portion of said vessel accomplishing said water-proofing of said vessel.

2. The combination as in claim 1 including a second electrically non-conducting coating, said second coating being applied to said heating element and to said first coating and operable to further electrically insulate said electric heater from the user of said electric utensil.

3. The combination as in claim 1, said vessel having an annular lip with a portion of said lip occupying a substantially horizontal plane, said thermally insulated container having a substantially flat upper peripheral edge, said upper peripheral edge operable to engage said horizontal portion of said lip and to provide a supporting surface for said vessel.

* * * * *

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,806,701 Dated April 23, 1974
Inventor(s) Robert J. Scott

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 3 -- line 15 -- "silicon" should be --silicone--.

Column 4 -- line 43 -- insert --and-- between "element" and "said

Signed and sealed this 3rd day of December 1974.

(SEAL)
Attest:

McCOY M. GIBSON JR.
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 3,806,701
DATED : April 23, 1974
INVENTOR(S) : Robert J. Scott

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Please change the title to read:

Electric Ceramic Utensil Construction

Column 3 - line 15 - "silicon" should be --silicone--.

Column 4 - line 43 - insert --and-- between "element"
and "said"

This certificate supersedes certificate issued December 24, 1974

Signed and Sealed this

Sixteenth Day of May 1978

[SEAL]

Attest:

RUTH C. MASON
Attesting Officer

LUTRELLE F. PARKER
Acting Commissioner of Patents and Trademarks

EXHIBIT E

United States Patent [19]

Scott

[11] 3,881,090

[45] Apr. 29, 1975

[54] **ELECTRIC COOKING UTENSIL HAVING A REMOVABLE CERAMIC VESSEL**[75] Inventor: **Robert J. Scott**, Blue Springs, Mo.[73] Assignee: **Rival Manufacturing Company**,
Kansas City, Mo.[22] Filed: **Dec. 3, 1973**[21] Appl. No.: **420,951**[52] **U.S. Cl.** **219/433; 219/424; 219/432;**
219/436; 219/442; 219/535; 219/536[51] **Int. Cl.** **F27d 11/02**[58] **Field of Search** 219/424, 432, 433, 436,
219/438, 439, 441, 442, 535, 536[56] **References Cited****UNITED STATES PATENTS**

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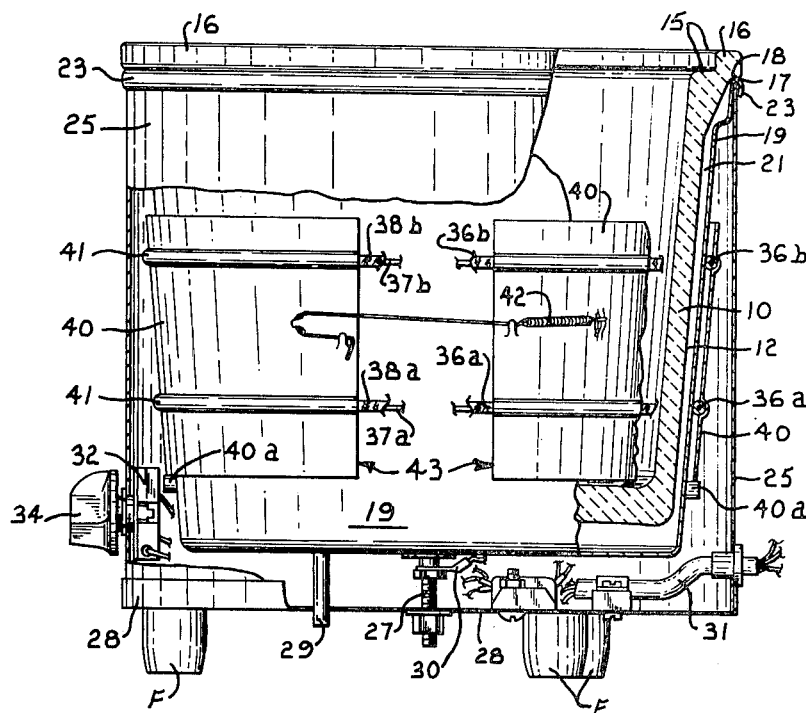
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Primary Examiner—Volodymyr Y. Mayewsky
Attorney, Agent, or Firm—Lowe, Kokjer & Kircher

[57] **ABSTRACT**

An electrically heated cooking utensil has a removable ceramic cup-shaped vessel for holding foodstuff. The ceramic vessel is retained in operative position by a metallic bowl shaped wall located interiorly of the cooking utensil. Electrically resistive heater wire is spiralled around the outwardly facing side of the retaining wall, within the channeled grooves of an adjacently attached compressive mounting unit. The mounting unit is held in place along the perimeter of the retaining structure by a spring in such a manner that automatic tension compensation is provided for in response to thermal expansion and contractions. The heater wires are encapsulated by glass fiber insulation thereby achieving electrical isolation.

2 Claims, 3 Drawing Figures

PATENTED APR 29 1975

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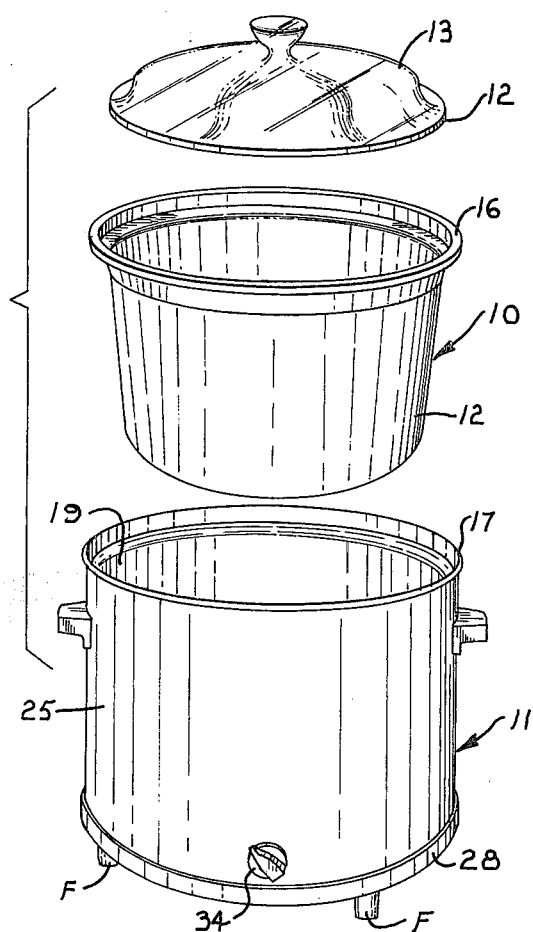


Fig. 1.

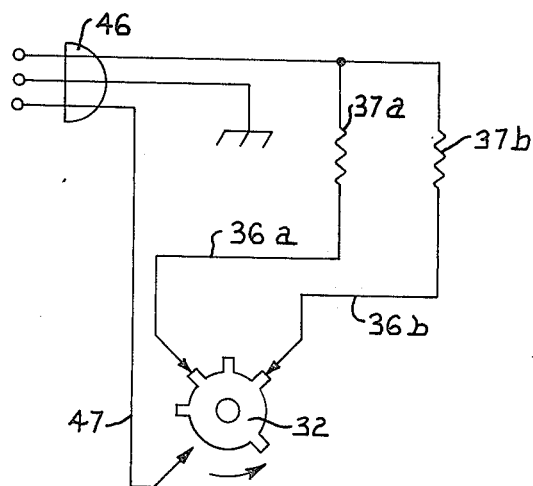


Fig. 3.

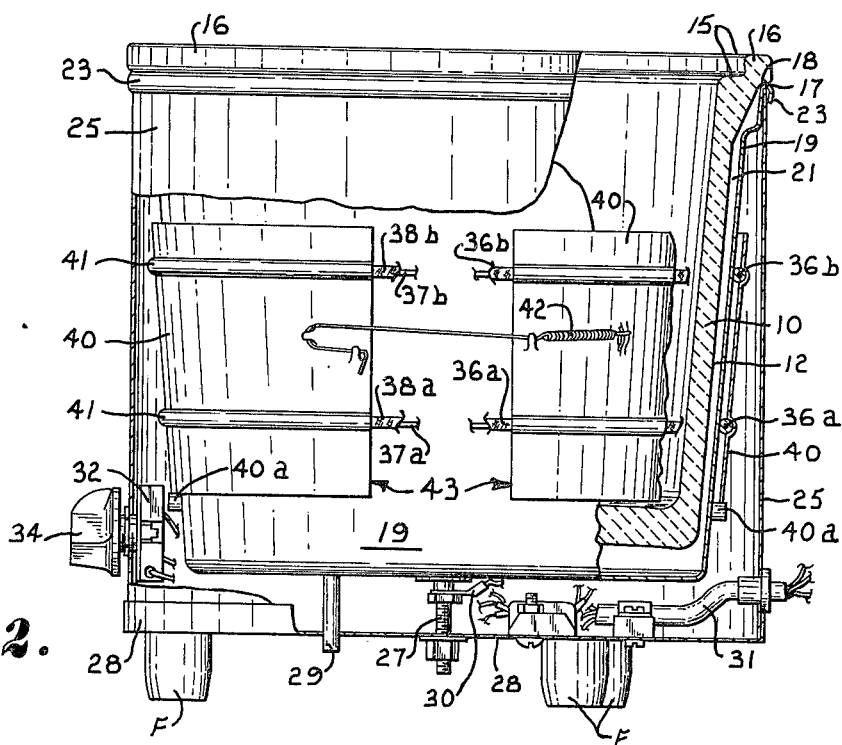


Fig. 2.

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**ELECTRIC COOKING UTENSIL HAVING A
REMOVABLE CERAMIC VESSEL****BACKGROUND AND BRIEF DESCRIPTION OF
THE INVENTION**

Electric cooking utensils having heater wire wrapped about the outside of a vessel for the heating of food-stuffs contained therein are well known in the art. However, these devices are subject to various deficiencies.

If the ceramic utensil were to break it is possible that the user thereof could sustain serious electrical shocks if the foodstuff were to contact the "hot" electrical wiring. It is possible that even a small unseen crack in the ceramic or earthenware container may allow enough seepage of liquid foodstuffs to create a dangerous electrical shock hazard.

Accordingly, it is a primary object of the subject invention to eliminate or reduce the potential electrical shock hazard in a non-thermostatically controlled electric cooking utensil which normally results when the earthenware vessel breaks. The heater wires are encased in a separate metallic wall which is separate from the earthenware vessel. The metallic wall is electrically insulated, and if the vessel were to break or develop a small unseen crack, resultant liquid seepage would not result in a shock hazard. In fact, with the subject invention, the liquid is precluded from entirely contacting the heater wires. This feature is further enhanced by a substantially liquid proof seal that is formed by the upper portion of the inner metallic container and the wall of the outer container of the utensil.

In the prior art, thermally induced expansions and contractions of the heater wires will promote the susceptibility of the earthenware vessel to cracking or deteriorating, because of the physical contact of the wire. Also, since the wire is glued or otherwise fixedly attached to the earthenware vessel, expansions or contractions of the wire itself may ultimately result in a deterioration of the heater circuit as the wire consequently may break or become loose.

It is a further object of the subject invention to avoid the preceding difficulties through the utilization of a unique heater wire attachment means. As mentioned previously, the heater wires are not wound around the earthenware vessel, so that the vessel itself will not be subject to the strains of expansions or contractions thereof. The wires are encapsulated by glass fiber insulation and are held in place about the outer surface of the separate metallic wall within the grooves in an independent mounting unit. A spring connects the ends of the heater wire mounting unit so as to compensate for expansions and contractions. Varying spring tension thus insures that the wires will adjustably be held within the circumferential grooves of the mounting unit.

Another object of the subject device is to provide an electric cooking utensil having an earthenware vessel which may easily be washed and cleaned. Since no wires are attached to the earthenware vessel removability is allowed and washing may thus be accomplished by completely immersing the earthenware vessel in water. The vessel itself is completely waterproof since it is glazed on both sides. Prior art devices are not immersible in water because damage to the electrical circuitry would likely occur, and cleaning of the cooking surfaces thus becomes difficult.

It is yet another object of the subject invention to provide an electric cooking utensil having an easily re-

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placeable earthenware vessel. If the cooking vessel should break no damage will occur to the heater, and the user may simply insert a replacement vessel. In prior art devices however, breakage of the earthenware vessel will necessitate expensive and time consuming factory repair. This is avoided by the aforementioned construction.

It is yet another object of the subject invention to provide an electric slow cooking utensil in which the possibility of the contents thereof being inadvertently burned is substantially minimized. In prior art devices having the heater wires attached directly to the exterior surface of the cooking vessel "hot spots" will develop along the heater wire region. Food contacting these areas may be burned under certain conditions. In the subject invention the heater wires are attached to a separate metallic wall. Between the other side of this metallic wall and the outer surface of the earthenware cooking vessel is an air pocket or chamber, which facilitates the uniform distribution of heat to the vessel. The vessel is thus uniformly heated and hot spots which may operate to burn the contents thereof are avoided.

It is yet another object to provide an electric slow cooking non-thermostatically controlled utensil which is particularly suited for the slow cooking of foodstuffs. The utilization of the aforementioned construction in which an air pocket or chamber operates to uniformly distribute heat is particularly suited to slow cooking applications. Slow cooking operations are particularly vulnerable to burning from "hot spots", which, as mentioned, are eliminated in the subject design.

Other and further objects of the invention, together with the features of novelty appurtenant thereto, will appear in the course of the following description.

DETAILED DESCRIPTION OF THE INVENTION

In the accompanying drawings which form a part of the specification and are to be read in conjunction therewith, and in which like reference numerals are employed to indicate like parts in the various views:

FIG. 1 is an exploded view of the device showing the top, the earthenware vessel, and the enclosure means;

FIG. 2 is a sectional and fragmentary view of the cooking utensil; and

FIG. 3 is a schematic diagram of the electrical wiring utilized by the subject device.

In FIG. 1, numeral 10 depicts a glazed earthenware cooking vessel that removably fits within the metallic shell (or outer container) structure 11 and which has a lid 13 removably located thereon. The outer edge 12 of the lid will engage circumferential inner surfaces 15 of lip structure 16 in vessel 10, thereby locating the lid. A bowl shaped metallic inner container 19 is positioned within the shell 11 with its upper circumferential edge 17 contacting the outside circumferential edge 18 on the underside of lip 16 on vessel 10. In this manner vessel 10 is located and retained within the metallic shell 11. It is significant to note that the only physical connection between the vessel 10 and the shell 11 occurs at the interface of edges 17 and 18 and that elsewhere an inner air chamber 21 (FIG. 2) separate wall 19 from the earthenware vessel.

As seen in FIG. 2, inner container 19 has an upper portion 23 that is crimped around the top of shell wall 25 to hold container 19 in place. This crimped portion also precludes liquid from entering the area where the later described heater wires are located during the nor-

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mal and expected use of the utensil. Bolt 27 depends from the bottom of the inner container 19 and serves to further retain same by its connection to shell bottom 28. Pin 29 extends from the bottom of container 19 through wall 28 to thereby prevent container 19 from rotating with respect to shell 11. Bolt 27 also has solderless connector 30 mounted therethrough which facilitates the grounding of metallic structure 19 and the metal shell walls 28 and 25 to further significantly reduce electrical shock hazards. Finally, feet F support the entire unit in the usual manner.

Electrical current enters the device through cable 31, and is delivered via switch 32 to one or both of the heater wires, which are generally indicated at 36a and 36b. The rotary knob 34 actually facilitates the switching operation as indicated in FIG. 3. The heater wires are comprised of electrically resistive conductors 37a and 37b which are encapsulated by vinyl or silicone insulation 38a and 38b. The heater wires are located exteriorly of the substantially vertical wall of container 19 within grooves 41 which form a portion of the generally cylindrical heater wire mounting unit 40. This heater wire mounting unit serves to compressively retain and locate the wires against the side wall of the container 19.

It is to be noted that the disclosed construction is facilitated by the utilization of suitably insulated heater wire such as that which is commercially available from Springfield Wire, Inc., of Springfield, Mass., and which is described in a Sale Bulletin entitled "Springfield Wire," and printed in the U.S.A. in Oct., 1969.

Heater wire mounting unit 40 does not extend completely around the circumference of container 19. A spring 42 extends through the gap 43 between the ends of the mounting unit and holds same in place by the exertion of pressure. Also, the lower edge of unit 40 rests upon pins 40a which extend horizontally from container 19. This construction enables the mounting unit to compensate for thermally induced expansion of the heater wires and container 19 since the spring 42 will expand when necessary and at the same time maintain sufficient pressure on the mounting unit to insure appropriate heater wire position. If the heater wires were simply glued to the surface of wall 19, for example, thermal expansion could destroy the glued interface, ultimately causing the heater wires to detach and fall toward the inner bottom of the cooking utensil.

In operation, heat generated by the heater wires is conducted by adjacent wall 19 into the inner chamber 21. This causes a mass of hot air of substantially uniform temperature to contact the surface 12 of the earthenware vessel 10, and heat is conducted there-through to accomplish the cooking of foodstuffs within the vessel.

It is to be noted that the utilization of the air pocket virtually eliminates the hot spots which are characteristic of devices having heater wires attached directly to the cooking vessel. Since the construction as shown lessens the likelihood of hot spot burning of foodstuffs, it is particularly adapted for slow cooking operations.

The circuit as shown in FIG. 3 discloses the electrical circuitry utilized in the subject device. The center conductor of plug 46 is grounded as shown to the metallic inner container to guard against shock hazards. When switch 32 is rotated counterclockwise one position, wire 47 will be electrically connected to heater wire 36a thereby generating heat in the distributed resis-

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tance 37a. When rotated an additional position, wires 36a and 36b will both be electrically connected to conductor 47 and both heater elements will be working. The latter position corresponds to the "high" setting of switch 34.

From the foregoing, it will be seen that this invention is one well adapted to attain all of the ends and objects hereinabove set forth together with other advantages which are obvious and which are inherent to the structure.

It will be understood that certain features and sub-combinations are of utility and may be employed without reference to other features and subcombinations.

As many possible embodiments may be made of the invention without departing from the scope thereof, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim:

1. An electric non-thermostatically controlled cooking utensil for slow cooking or warming food, said utensil including a vessel comprised of ceramic or earthenware material, said vessel having an annular lip located at the upper end portion thereof and extending radially outwardly therefrom, said vessel further including a generally cylindrical side wall integrally formed with said lip and a bottom wall,

an inner container constructed of material having the ability to conduct heat and having a shape similar to said vessel and sized to permit at least a portion of said vessel to be received within said inner container, the inner container being substantially separated from said vessel by an air chamber located therebetween,

at least one electric heating element operable to supply heat to the utensil contents by heating said inner container, said inner chamber and said vessel, said heating element encircling said inner container and being attached to the exterior surface of said inner container and electrically insulated therefrom,

an outer container being of a size and shape to hold substantially all of said inner container and said vessel therein, said inner container having an upper end portion forming a seal with said outer container, said seal thereby precluding liquid located interiorly of said vessel from reaching said electric heating element while pouring out the contents of said vessel or in the event of said vessel becoming cracked or broken, said lip of said vessel contacting said seal and supporting substantially the entire weight of said vessel thereon in spaced relationship from said inner container so that neither said side wall nor said bottom contacts said inner container, said vessel structure including said lip permitting said vessel to be easily removed from said container without removing any other portions of the utensil or using special tools,

attaching means for securing and attaching said heating element to the exterior surface of said inner container, and

electric lead means for applying electric current to said electric heating element thereby effecting the heating of said heating element.

2. The combination as in claim 1 wherein said heating element attaching means includes a cylindrical mounting having a circumference less than said inner container, the mounting unit having ends connected by a spring member, said spring member operable to resiliently secure and locate the mounting unit on said inner container while at the same time compensating for thermally induced expansions or contractions of said mounting unit.

* * * * *

EXHIBIT F

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS**

THE HOLMES GROUP, INC.,	:	
	:	
Plaintiff,	:	Civil Action No. 05-CV-11367 REK
v.	:	(Alexander, M.J.)
	:	
WEST BEND HOUSEWARES, LLC and	:	
FOCUS PRODUCTS GROUP, L.L.C.,	:	
	:	
Defendants.	:	

**HOLMES' RESPONSE TO
WEST BEND'S FIRST SET OF INTERROGATORIES**

Plaintiff, The Holmes Group, Inc. (hereinafter "Holmes") submits the following Answers to Defendants, West Bend Housewares, LLC and Focus Products Group, L.L.C. (hereinafter collectively "West Bend") First Set of Interrogatories.

These Answers are subject to the following general objections.

GENERAL OBJECTIONS

Each of Holmes' responses are subject to the following objections and conditions as if such objections and conditions were fully set forth in said response. The responses do not repeat each such objection or condition.

1. Holmes objects to the Interrogatories to the extent they request information not relevant to the subject matter of the pending action.

2. Holmes objects to the Interrogatories to the extent they are unreasonably cumulative or duplicative, or seek information obtainable from some other source that is more convenient, less burdensome or less expensive.

3. Holmes objects to the Interrogatories to the extent they request information that is protected from disclosure by the attorney-client privilege, the attorney work product doctrine, the protection afforded to materials prepared in anticipation of litigation or any other applicable privilege or immunity. Nothing contained in these objections and responses is intended to be, or in any way constitutes, a waiver of any applicable privilege, immunity or doctrine. Any document or thing withheld on the grounds of an applicable privilege or immunity will be identified on a separate privilege log. Holmes objects to identifying documents generated since the inception of this lawsuit by or at the direction of trial counsel, as such identification is likely to reveal work-product and/or attorney-client privileged information.

4. Holmes objects to the disclosure of confidential information and the production of documents containing confidential information until the Court enters an appropriate Protective Order.

5. Holmes objects to the Interrogatories to the extent they impose obligations on Holmes that go beyond the requirements set forth in the Federal Rules of Civil Procedure and Local Rules for the District of Massachusetts.

6. Holmes objects to West Bend's definitions and instructions to the extent they impose obligations on Holmes that go beyond the requirements set forth in the Federal Rules of Civil Procedure and Local Rules for the District of Massachusetts.

7. As discovery in this case is ongoing, Holmes reserves the right to supplement its objections and responses to West Bend's requests.

SPECIFIC OBJECTIONS AND RESPONSES

Subject to the foregoing General Objections, Holmes responds as follows:

Interrogatory No. 1

Identify each claim of the Holmes patents-in-suit that you contend is infringed by West Bend Housewares or Focus and state in detail your infringement contentions and claim construction by completing a claim chart comparing each West Bend Housewares cooker you contend infringes any of the Holmes patents-in-suit with each asserted claim of each Holmes patent-in-suit, on a limitation-by-limitation basis, describing the complete factual and legal bases for any contention by Holmes that any claim limitation is present in the West Bend Housewares cooker(s) you accuse of infringement, including whether each element is present literally or present under the doctrine of equivalents, whether the alleged infringement is direct or indirect, and identifying the documents and things that you contend supports your contentions and claim construction, and each person having knowledge of any factual bases for the response.

Response to Interrogatory No. 1

Holmes objects to this interrogatory to the extent that it seeks information protected by the attorney/client privilege and/or work product immunity. Subject to and without waiver this objection and the General Objections, Holmes responds as set forth in Exhibit A attached hereto.

Interrogatory No. 2

Identify the field of art and characteristics of a person having ordinary skill in the art for the Holmes patents-in-suit.

Response to Interrogatory No. 2

Subject to the General Objections, Holmes responds that the field of art is slow-cooker appliances and a person having ordinary skill in the art relative to the claimed inventions in the

Holmes patents-in-suit is an engineer having at least a Bachelor of Science degree and/or a designer having several years experience in the design, development and manufacture of slow-cooker appliances.

Interrogatory No. 3

For each West Bend Housewares cooker identified in response to Interrogatory No. 1, describe the circumstances under which any person at Holmes first had knowledge of such product, describe any analysis, examination or investigation conducted by Holmes, or on Holmes' behalf, of such product that provided the basis for Holmes' infringement contentions, describe the circumstances of such analysis, examination or evaluation, identify any documents referring or relating to such analysis, examination or evaluation, and identify the person(s) involved.

Response to Interrogatory No. 3

Holmes objects to this interrogatory to the extent that it seeks information protected by the attorney/client privilege and/or work product immunity. Subject to and without waiver of this objection and the General Objections, Holmes responds that on or about June, 2005, Holmes obtained a West Bend 6-Quart Electronic Cookery™ Cooker, Model 84386 from Wal-Mart. Holmes' counsel of record conducted an infringement investigation of the West Bend product. The investigation included analysis of the structure and operation of the West Bend product compared to the claims of the Holmes patents-in-suit.

Interrogatory No. 4

Separately for the subject matter of each claim of the Holmes patents-in-suit, state the date on which the subject matter of each claim was first conceived, including identification of the person(s) who conceived of such subject matter and any and all documents corroborating or otherwise related to the dates of such conception, and the date on which the subject matter of each claim was first reduced to practice, including identification of the person(s) who reduced to practice such subject matter and any and all documents corroborating or otherwise related to the dates of such first reduction to practice.

Response to Interrogatory No. 4

Subject to the General Objections, pursuant to Fed. R. Civ. P. 33(d), upon entry of a Protective Order by the Court, Holmes will produce non-privileged business records from which the information requested can be derived or ascertained.

Interrogatory No. 5

Identify each product (whether experimental or otherwise) developed, manufactured or produced for, or by, Holmes that embodies any claim of the Holmes patents-in-suit, including the name and internal nomenclature of each such product, the patent claim(s) it embodies, the supplier or source of its constituent elements, if and when each such product was marked in accordance with 35 U.S.C. § 287, and identify the persons who are most knowledgeable about each such product.

Response to Interrogatory No. 5

Holmes objects to this interrogatory to the extent that it seeks information protected by the attorney/client privilege and/or work product immunity. Subject to and without waiver of this objection and the General Objections, pursuant to Fed. R. Civ. P. 33(d), upon entry of a

Protective Order by the Court, Holmes will produce non-privileged business records from which the information requested can be derived or ascertained.

Interrogatory No. 6

For each product identified in response to Interrogatory No. 5, describe in detail the circumstances, including the date(s) and person(s) involved, of the first sale, first offer for sale, first solicitation or inquiry for possible future sale of that product, as well as any solicitation, inquiry, or agreement for possible testing of that product, and the first disclosure, presentation, demonstration, or use of that product in front of anyone not then employed by Holmes.

Response to Interrogatory No. 6

Holmes objects to this interrogatory to the extent that it seeks information protected by the attorney/client privilege and/or work product immunity. Subject to and without waiver of this objection and the General Objections, pursuant to Fed. R. Civ. P. 33(d), upon entry of a Protective Order by the Court, Holmes will produce non-privileged business records from which the information requested can be derived or ascertained.

Interrogatory No. 7

Identify in detail any and all evidence of secondary indicia of non-obviousness that Holmes contends supports or relates to the non-obviousness of any claims of the Holmes patents-in-suit, including: whether the claimed inventions, or any product that embodies or uses any claimed invention, has been commercially successful; whether the Holmes patents-in-suit have been licensed to others; whether the claimed invention have been copied by others; whether anyone has praised, criticized or discussed the significance of the claimed inventions; whether the claimed inventions satisfied a long felt need in the industry; whether others tried and failed to make the claimed inventions; and whether the claimed inventions achieved unexpected results,

and any and all other evidence that Holmes contends supports or relates to the non-obviousness of the Holmes patents-in-suit, including identification of all documents and persons with knowledge concerning such contentions.

Response to Interrogatory No. 7

Holmes objects to this interrogatory to the extent that it seeks information protected by the attorney/client privilege and/or work product immunity. Subject to and without waiver of this objection and the General Objections, Holmes states that its programmable slow cookers covered by the Holmes patents-in-suit have been commercially successful, satisfy a long felt need in the industry, have been copied by others and that Holmes may license the Holmes patents-in-suit to others. Pursuant to Fed. R. Civ. P. 33(d), upon entry of a Protective Order by the Court, Holmes will produce non-privileged business records from which the information requested to support Holmes answer can be derived or ascertained.

Interrogatory No. 8

Separately for each Holmes patent-in-suit, describe in detail Holmes' contention that West Bend Housewares and Focus have willfully infringed, including identification of all documents supporting such contentions and any and all persons with knowledge or information of such contentions.

Response to Interrogatory No. 8

On October 14, 2004, counsel for Holmes sent a letter to West Bend placing them on notice of Holmes U.S. Patent Nos. 6,573,483 and 6,740,855 (the Holmes patents-in-suit). On October 26, 2004, West Bend's counsel, Martin Stern of Michael Best & Friedrich, LLP advised counsel for Holmes that they represented West Bend in intellectual property matters. On April 22, 2005, counsel for Holmes advised Mr. Stern that Holmes had been granted U.S. Patent

No. 6,872,921. Notwithstanding the actual notice of the Holmes patents-in-suit, West Bend imported, distributed and sold slow cookers which infringe the Holmes patents-in-suit in willful, wanton disregard of the Holmes patents-in-suit. Pursuant to Fed. R. Civ. P. 33(d), upon entry of a Protective Order by the Court, Holmes will produce non-privileged business records from which the information requested to support Holmes answer can be derived or ascertained.

Interrogatory No. 9

State for all the Holmes Programmable Cookers sold from the date of first sale to the present: (a) gross dollar sales, (b) profits, and (c) number of units sold, and identify each person or entity who purchased or placed an order for Holmes Programmable Cookers and, for each such person or entity, state the date of each purchase or order, state the total dollar and unit amounts each person or entity purchased or ordered, and identify all documents that reflect the dollar and unit amounts purchased or ordered.

Response to Interrogatory No. 9

Holmes objects to this interrogatory as unduly burdensome and not relevant to the issues in this case. Holmes further objects to this interrogatory to the extent that it seeks information protected by the attorney/client privilege and/or work product immunity. Subject to and without waiver of this objection and the General Objections, pursuant to Fed. R. Civ. P. 33(d), upon entry of a Protective Order by the Court, Holmes will produce non-privileged business records from which the information requested can be derived or ascertained.

Interrogatory No. 10

Identify all manufacturers of the Holmes Programmable Cookers and all persons and entities approached by Holmes to manufacture the Holmes Cookers and the date(s) each was approached.

Response to Interrogatory No. 10

Holmes objects to this interrogatory as unduly burdensome and not relevant to the issues in this case. Holmes further objects to this interrogatory to the extent that it seeks information protected by the attorney/client privilege and/or work product immunity. Subject to and without waiver of this objection and the General Objections, pursuant to Fed. R. Civ. P. 33(d), upon entry of a Protective Order by the Court, Holmes will produce non-privileged business records from which the information requested can be derived or ascertained.

Interrogatory No. 11

Identify each person, whether or not employed by Holmes, who was involved in or knows about the conception, creation, design, or production of any catalog, packaging, advertising, marketing, promotional or sales material for the Holmes Programmable Cookers, and with respect to each such person, state in detail the nature of such involvement, or the extent of such knowledge.

Response to Interrogatory No. 11

Holmes objects to this interrogatory as unduly burdensome and not relevant to the issues in this case. Holmes further objects to this interrogatory to the extent that it seeks information protected by the attorney/client privilege and/or work product immunity. Subject to and without waiver of this objection and the General Objections, pursuant to Fed. R. Civ. P. 33(d), upon entry

of a Protective Order by the Court, Holmes will produce non-privileged business records from which the information requested can be derived or ascertained.

Interrogatory No. 12

Identify the circumstances under which Holmes first learned of the existence of the West Bend Housewares patents-in-suit, including the date and manner in which Holmes came to know of the existence of the West Bend Housewares patents-in-suit and identify all persons with knowledge thereof and all documents relating thereto.

Response to Interrogatory No. 12

Holmes objects to this interrogatory to the extent that it seeks information protected by the attorney/client privilege and/or work product immunity. Notwithstanding this specific objection and the General Objections, Holmes states that it first became aware of the West Bend patents-in-suit upon service of West Bend's Answer and Counterclaims. Pursuant to Fed. R. Civ. P. 33(d), upon entry of a Protective Order by the Court, Holmes will produce non-privileged business records from which the information requested to support Holmes answer can be derived or ascertained.

Interrogatory No. 13

Explain in detail Holmes' contentions that any claim of the West Bend Housewares patents-in-suit is invalid under 35 U.S.C. §§ 102, 103 and 112, including identification of the documents that Holmes contends supports such contentions, the complete legal and factual basis for such contentions, and each person having knowledge of any factual basis or bases.

Response to Interrogatory No. 13

Each of the West Bend patents-in-suit are invalid under 35 U.S.C. § 102(b) in view of at least sales of oval slow cookers more than one year before the earliest effective filing date of the

West Bend patents-in-suit. Specifically, each of the following Rival® Crockpot® brand slow cookers were sold in the United States in 1997, Model Nos. 3745-GR; 3745-PS and 3755-HG. Pursuant to Fed. R. Civ. P. 33(d), upon entry of a Protective Order by the Court, Holmes will produce non-privileged business records from which the information requested to support Holmes answer can be derived or ascertained.

Each of the West Bend patents-in-suit are invalid as being obvious over prior art round slow cookers. Holmes investigation regarding the invalidity of the West Bend patents-in-suit is ongoing. As further information becomes available, Holmes will supplement its response.

Interrogatory No. 14

Explain in detail Holmes's contention that the West Bend Housewares patents-in-suit are not infringed, including any identification of all facts supporting this contention and the persons most knowledgeable of those facts.

Response to Interrogatory No. 14

To date, West Bend has identified Rival® Crockpot® brand slow cooker Model Nos. 3730 and 37351 as allegedly infringing each of the West bend patents-in-suit. With respect to Holmes Model No. 3730, the ornamental appearance of the slow cooker is more similar to the prior art slow cookers identified in response to Interrogatory No. 13 than to that shown in each of the West Bend patents-in-suit. Thus, Holmes is practicing the prior art and therefore cannot infringe the West Bend patents-in-suit.

Furthermore, Holmes Model 3730 differs from the claimed design in several significant ways. With respect to U.S. Patent No. D444,993 (the '993 patent) the Holmes Model No. 3730 slow cooker includes a lid and crock which cooperate to form a shape significantly different from the shape of the lid and crock shown in Figs. 2-5 of the '993 patent. Additionally, the

Holmes Model No. 3730 includes a crock having a lip which differs in shape from that shown in Fig. 6 of the '993 patent. Lastly, Holmes Model No. 3730 includes a bottom surface having only three (3) feet coupled to a conical surface, a large oval indentation, a central circular indentation including a cylindrical fastener and a plurality of holes around an outer periphery of the bottom surface which differs in appearance from that shown in Fig. 7 of the '993 patent. Accordingly, Holmes Model No. 3730 is not substantially similar in overall appearance to the claimed design in the '993 patent and, therefore, does not infringe.

With respect to U.S. Patent No. Des 434,266 (the '266 patent), each of the differences set forth above also apply with the following additional differences. Holmes Model No. 3730 includes a top portion of the handle having a rounded periphery and a convex top portion. The convex top also includes a series of ornamental indentations around the outer periphery of the handle top. The '266 patent claims a handle having a top portion which is flat from a side view and whose outer periphery slopes down and inward from the top surface. Accordingly, for the reasons set forth with respect to the '993 patent as well as those set forth above, Holmes Model No. 3730 does not infringe.

With respect to U.S. Patent No. D444,664 (the '664 patent) each of the differences set forth above with respect to the '993 and '266 patents apply with the following additional differences. Holmes Model No. 3730 includes a bottom having only three (3) feet, wherein the shape of each foot includes a conical shaped portion leading to a cylindrical shaped portion which is substantially different from the four (4) cylindrically shaped feet shown in Figs. 2-5 and 7 of the '664 patent.

With respect to Holmes Model No. 37351, the ornamental appearance of the slow cooker is more similar to the prior art slow cookers identified in response to Interrogatory No. 13 than to

that shown in each of the West Bend patents-in-suit. Thus, Holmes is practicing the prior art and therefore cannot infringe the West Bend patents-in-suit.

Additionally, Holmes Model 37351 differs from the claimed design in several significant ways. With respect to U.S. Patent No. D444,993 (the '993 patent) the Holmes Model No. 37351 slow cooker includes a lid and crock which cooperate to form a shape significantly different from the shape of the lid and crock shown in Figs. 2-5 of the '993 patent. Furthermore, Holmes Model No. 37351 includes a crock having a lip which differs in shape from that shown in Fig. 6 of the '993 patent. The lid also includes a hole therein with a cylindrical washer surrounding the hole. Lastly, Holmes Model No. 37351 includes a bottom surface having only three (3) integrally formed, conically shaped, feet two (2) circular indentations each including a cylindrical fastener, and a plurality of holes in the bottom surface which differs in appearance from that shown in Fig. 7 of the '993 patent. Accordingly, Holmes Model No. 37351 is not substantially similar in overall appearance to the claimed design in the '993 patent and, therefore, does not infringe.

With respect to U.S. Patent No. Des 434,266 (the '266 patent), each of the differences set forth above also apply with the following additional differences. Holmes Model No. 37351 includes a top portion of the handle having a rounded periphery and a convex top portion. The convex top also includes a series of ornamental indentations around the outer periphery of the handle top. The '266 patent claims a handle having a top portion which is flat from a side view and whose outer periphery slopes down and inward from the top surface. Accordingly, for the reasons set forth with respect to the '993 patent as well as those set forth above, Holmes Model No. 37351 does not infringe.

With respect to U.S. Patent No. D444,664 (the '664 patent) each of the differences set forth above with respect to the '993 and '266 patents apply with the following additional differences. Holmes Model No. 37351 includes a bottom having only three (3) integrally formed, conically shaped feet which is substantially different from the four (4) cylindrically shaped feet shown in Figs. 2-5 and 7 of the '664 patent.

Holmes further reserves the right to supplement its response based upon West Bend's identification of any alleged points of novelty of the West Bend patents-in-suit in its response to Holmes' First Set of Interrogatories.

Interrogatory No. 15

Identify all Holmes slow cookers circular or oval in shape and made, made for, sold, or offered for sale by Holmes on or after November 28, 2000, and for each, state the date each was first sold or offered for sale, the date each was first presented to a person not then employed by Holmes, and the date each was first advertised or otherwise promoted in marketing or other materials.

Response to Interrogatory No. 15

Holmes objects to this interrogatory as unduly burdensome and not relevant to the issues in this case. Holmes further objects to this interrogatory to the extent that it seeks information protected by the attorney/client privilege and/or work product immunity. Subject to and without waiver of this objection and the General Objections, pursuant to Fed. R. Civ. P. 33(d), upon entry of a Protective Order by the Court, Holmes will produce non-privileged business records from which the information requested to support Holmes answer can be derived or ascertained.

Interrogatory No. 16

State whether Holmes intends to rely upon evidence of good faith reliance upon opinion of counsel in defense to the allegation that its alleged infringement of the West Bend Housewares patents-in-suit was willful and (a) identify all documents referring to or relating to any opinions of any counsel the subject of which is in whole or in part infringement or invalidity or unenforceability of the West Bend Housewares patents-in-suit; (b) identify all attorneys consulted on the subject of infringement, invalidity or unenforceability of the West Bend Housewares patents-in-suit and (c) identify all employees, agents or representatives of Holmes who consulted with attorneys on the subject of the West Bend Housewares patents-in-suit.

Response to Interrogatory No. 16

Holmes objects to this interrogatory to the extent that it seeks information protected by the attorney/client privilege and/or work product immunity. Holmes further objects to this interrogatory as being premature. At the appropriate time, should Holmes decide to rely upon opinion of counsel, pursuant to Fed. R. Civ. P. 33(d), upon entry of a Protective Order by the Court, Holmes will produce non-privileged business records from which the information requested can be derived or ascertained.

VERIFICATION OF ANSWERS

I, Timothy Gallogly, Esq., an authorized agent of JCS/THG, LLC d/b/a The Holmes Group ("Holmes") declare that I have read the foregoing answers on behalf of Holmes, that I have read the foregoing answers and subscribe to the same on behalf of Holmes, that said answers were prepared with assistance and advice of counsel and other representatives of Holmes, that said answers, subject to inadvertent or undiscovered errors, are based on, and

therefore, limited by the records and information still in existence, presently recollected and thus far discovered in the course of preparation of these answers; that consequently, Holmes reserves the right to make changes in the answers if it appears at any time that omissions or errors have been made therein or that more accurate information is available; and that subject to the limitations set forth herein, that said answers are true to the best of my knowledge, information and belief.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on March ____, 2006.

JCS/THG, LLC d/b/a
THE HOLMES GROUP


By: _____
Name: Timothy Gallogly, Esq.
Title: Vice-President and
Associate General Counsel

The undersigned subscribes to the foregoing objections.

Respectfully submitted,

JCS/THG, LLC d/b/a
THE HOLMES GROUP
By its Attorneys,

Dated: March 8, 2006



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CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing HOLMES' RESPONSE TO WEST BEND'S FIRST SET OF INTERROGATORIES has been served via e-mail, this 8th day of March, 2006 upon the following:


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